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PAPER TRADE JOURNAL

PAPER THE MAGAZINE

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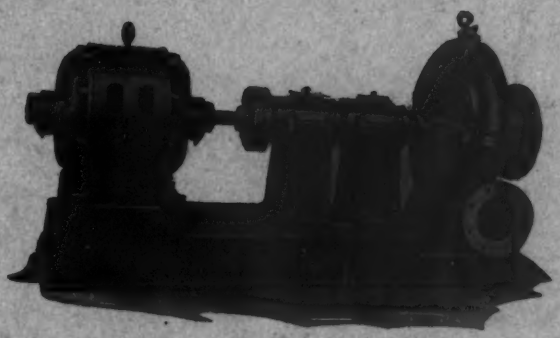

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FOR PAPER

PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALME' PRESIDENT — GEO. S. MACDONALD VICE-PRESIDENT & TREAS — F. K. HOPPIE SECRETARY

10 EAST 39TH ST. N.Y. U. S. A

TABLE OF CONTENTS

Copyright, 1925, by Lockwood Trade Journal Co., Inc.

World's Largest News Print Machine Ordered	27
Eddy's News Print Mill Ready	27
Paper Specifications Board Ends Work	27
Trade Treaty Delay Alarms Canada	28
Manitoba Mills Ask for Cooperation	28
Sandy Hill Iron Works Elect Officers	28
Color of Paper Fillers	29
Chart Showing Paper Production	29
Philadelphia Trade More Encouraged	30
Trades Relation Committee Elected	30
Leon Beck Predicts Paper Scarcity	30
Toronto Book Paper Market Improves	32
E. W. Backus Denied Further Concessions	32
New Cornwall, Ont. Plant Near Completion	32
French Paper Market for 1924	34
Rate Investigation Discontinued	36
Construction News	38
Croker, Burbank & Co. to Build	40
OBITUARY	40
Reception to Mr. and Mrs. M. O. Wood	40
May Reduce Timberland Fire Hazard	40
New York Trade Jottings	42
News of the Boston Trade	42
U. S. Imports and Exports of Paper	44
EDITORIAL	48
Government Paper Bids and Awards	49
Ruling on Parchment to Stand	49
Park Memorial to W. Murray Crane	49
TECHNICAL SECTION	51
COST SECTION	61
Cost Accountants and Engineers to Meet	66
Important Chicago Business Changes	66
To Manufacture Kindergarten Papers	66
Imports of Paper and Paper Stock	68
Decision on Paper Stock Appeal	70
German Paper Conditions	70
Los Angeles Trade News	72
Plans for National Container Meeting	74
NEW YORK MARKET REVIEW	72
MISCELLANEOUS MARKETS	74
MARKET QUOTATIONS	76

Want and For Sale Advertisements, Pages 80, 81, 82, 83

We offer

QUALITY
ECONOMY
SERVICE

Our confidence in the superior quality of our Blue Ridge Clay and our new McNamee Clay is backed up by certain results obtained by large paper mills which are using them.

And, also from the advice of practical paper making chemists who have analyzed them and made searching laboratory tests of their practical filling qualities.

These clays are pulverized, and can be handled by pneumatic systems. Such up-to-date systems have proven savings in unloading costs. They are simple and self-contained. Their use has been highly developed in handling raw materials of many kinds.

We believe any mill once informed of the advantages from the use of these clays and such handling devices will install such modern systems and adopt either of these grades as their supply of filling clay.

We will appreciate the opportunity of explaining our proposition to you in detail.

At present paper prices are not economies such as we offer a necessity?

Our plants are open to your inspection.

R. T. Vanderbilt Company,
50 East 42nd Street,
New York City, N. Y.

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

PAPER

Vol. LXXX. No. 20 Thursday, May 14, 1925

The Magazine of the Paper Industry

World's Largest News Print Machine for Kenora Mill

Minnesota and Ontario Paper Co. Orders Giant Machine Which Will Produce a News Print Sheet 243 Inches Wide at the Rate of 1,100 Feet a Minute—Bagley & Sewall Co. of Watertown, N. Y., To Be Builders and It Is Expected to Have the New Machine Completed and Ready for Installation Before the Close of the Year.

A paper machine which will produce a sheet of news print paper 245 inches wide at the rate of 1,100 feet a minute—the largest in the world—has been ordered by the Minnesota and Ontario Paper Company and will be installed in its paper mill at Kenora, Ontario, it was announced here today by E. W. Backus, president of the company.

"The new machine will be approximately 275 feet long, and will be installed alongside a news print paper machine in our Kenora mill which is the second largest in the world, being surpassed in size only by one in Europe," Mr. Backus said. "This machine, however, recently established a new world's production record when it produced 119 tons of news print paper in one day, while running at the average speed of 855 feet a minute. The mammoth new machine which now has been ordered from Bagley & Sewall Company of Watertown, New York, will turn out a sheet 11 inches wider at the rate of 245 more feet per minute and produce in excess of 31 more tons of news print a day.

"Several months will be required to complete the new machine but it will be delivered and in operation before the close of the present year."

Eddy's News Print Mill Ready

E. B. Eddy & Co., Ltd., of Hull, Que., state that their new news print mill will go into operation very shortly, and that from the time of opening till the end of the year an average daily output is expected of between 140 and 150 tons. The present output of sundry papers, consisting of wrappings, book and writings, toilet, tissue and bag papers, amounts to about 17,000 tons per annum. The groundwood mill is producing about 100 tons daily, while the sulphite pulp mill has a capacity of about 70 tons daily, which will leave a surplus of from 30 to 40 tons over the requirements of the news print mills.

Ontonagon Fibre Co. to Expand

HOUGHTON, Mich., May 11, 1925.—W. F. Milford, Calumet contractor, has been engaged to erect a large brick and concrete building for the Ontonagon Fibre company, at Ontonagon, in which the firm plans to house a paper mill, the first of its kind to be built in the northerly part of the peninsula. Plans called for a three-story building seventy-five feet wide by 140 in length, adjoining the company's present plant which turns out finished pulp.

The Ontonagon Fibre company has been engaged in manufacturing pulp for the past several years and has found a ready market for its product in the Wisconsin territory. The demand for paper increasing, the firm sees new possibilities in the plant and will turn out the finished product.

The plans for the mill call for a strictly up-to-date industrial unit, something new in this line in the Copper Country. The plant will be well equipped with windows, giving employes the maximum of sunlight. Mechanical equipment will be installed as soon as the roof is built.

Fuel Equipment for St. Maurice Lumber Co.

St. Maurice Lumber Company for its new Three River plant has placed with the Combustion Engineering Corporation, Ltd., through its consulting engineers, McClellan & Junkersfeldt, the largest contract for pulverized fuel equipment to be let within the British Empire.

The contract covers complete Lopulco equipment for 4 B & W boilers each having 10,470 square feet of heating surface, furnace width 17 feet, 7 inches, working pressure of 130 pounds.

The equipment consists of Lopulco feeders and burners, horizontal and rear wall water screens, Murray Fin side walls, 5-6 ton Raymond mills, 5 Lopulco dryers, 5 C. E. air heaters, forced and induced draft fan equipment in connection with the heaters.

Paper Specifications Board Finishing Work

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 13, 1925.—The Federal Paper Specification Board which was appointed some time ago by General Lord, director of the Budget has practically completed its work according to F. B. Veitch. The Committee is hopeful of finishing up at the end of the fiscal year, June 30.

It is understood that this Committee in drawing up specifications for the various government departments has followed as closely as possible the specifications approved by the Joint Congressional Committee on printing, in its purchase of the annual supply of paper for the Government Printing Office.

Champion Coated Paper Co. Entertains

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, May 11, 1925.—The Champion Coated Paper Company entertained the Chicago Club of Printing House Craftsmen on a trip from Chicago to its plant at Hamilton, Ohio, May 8-10. No expense was spared nor detail overlooked to make the visit highly instructive and thoroughly enjoyable.

Delay Over Australian Trade Treaty Alarms Canada

News Print Manufacturers Express Concern Over Failure to Submit Treaty for Ratification—Government Cooperation Asked for Manitoba Mills—Quebec Department of Lands and Forests to Continue Use of Hydroplanes—Exchequer Court Hearing Claim of Belgo Canadian Paper Co.

[BY OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 12, 1925.—Serious concern is being felt by Canadian news print manufacturers at the delay of the Federal government in submitting for ratification the Australian trade treaty. The delay is being caused by the fact that the Canadian Government objects to the Australian interpretation of some of the clauses, and particularly to the interpretation that in order to secure preference for Canadian goods as British products they must have been manufactured to the extent of 75 per cent in Canada. The Canadian Government has sent a representative to Australia to endeavor to get a modification of the clauses objected to, and have expressed a hope that there may be a favorable result in time to permit the ratification of the agreement during the present sitting of Parliament. Meanwhile the duty of £3 per ton continues to be levied against Canadian news print, while news print from the United Kingdom is admitted free. Canadian manufacturers estimate that they should get at least one-half of the market, and that through the delay they are losing $10,000 a day, or $3,000,000 a year.

The establishment of many new news print plants in this country has brought about over-production, both present and prospective, and new markets are urgently required. It is pointed out that Newfoundland is becoming one of Canada's foremost competitors, not only in the United States but elsewhere, and that this country is now seeking Australian preference. It is feared that if the treaty is not ratified in the present Parliament, Canada will lose the Australian market, now in the grasp of this country, altogether.

Government Co-operation Asked

Co-operation of the Federal Government to provide sufficient supplies of pulpwood for the enterprise is being sought by the Spanish River Pulp and Paper Mills, Ltd., in conjunction with J. D. McArthur has announced its willingness to erect a 200-ton pulp and paper mill in Manitoba. It is willing to pay for pulpwood from Crown lands a price equal to the stumpage of pulpwood to competing mills in Northern and Northwestern Ontario and to leave subsequent prices to be fixed by the Crown.

These concessions are sought, the companies claim, only to ensure the setting of a sufficient supply of pulpwood to keep the mill going for a number of years. The expenditure on the contemplated mill would be about five or six million dollars.

The companies have signified a willingness to operate the pulpwood berth under the direction of the Dominion Forestry Department, to attend to forestation and to assume a fair share of the cost of increased fire protection.

Quebec Forest Patrol

The Quebec Department of Lands and Forests will utilize hydroplanes again this season for exploration, inventory work and fire protection of forests, and a contract has been signed with an aeroplane firm to this effect. Three hydroplanes operating under Captain Harry Quigley will be located at the Provincial Government's air station at Roberval, and from that point work will be carried out in the Lake St. John district, the North Shore of the St. Lawrence, and the Abitibi district. Work has been started this week.

Belgo Company's Big Claim

A special term of the Exchequer Court is being held at Quebec this week to hear a claim for $260,000 by the Belgo Canadian Paper Company, Ltd., of Shawinigan Falls, against the Canadian National Railways for damages.

In the spring of 1919, the plaintiff alleges, the C. N. R. was responsible for a fire, which broke out on its limits near Vandry and Windigo on the trans-Continental Railway, and that damage to the extent above-mentioned was caused. Though the action was entered several years ago there was delay from time to time, and it was only a few days ago that the case was definitely set for hearing. On the other hand in its contra claim the C. N. R. alleges that through raising its dams at a point near Vandry the railway was flooded, and that a washout followed, resulting in heavy damages.

Big Fire Loss in New Brunswick

Fourteen hundred acres have already been burned over by forest and bush fires in New Brunswick, the season of 1925 being marked by the earliest start of the fire menace on record.

All the 1,400 acres burned over are privately-owned lands with the exception of 80 acres of Crown lands, but the record shows unheard-of losses for such an early date. Usually it is the month of May before the first fires occur, but this year there were fourteen fires in April, commencing on the sixth.

Charlotte County was hardest hit by the early fires, seven of the fourteen occurring in that county, and the most serious was at Pennfield, where 1,000 acres—much of it young growth—were burned over. There is still snow in the woods in the northern parts of the province, but Carleton and King's counties each had one fire last month, while York and Sunbury counties each had two.

President Clarke Back from England

Frank W. Clarke, president of the Canadian Pulp and Paper Association, has just returned from a three months' trip to England connected with the Anglo-Canadian Paper Company, Ltd., and the Gulf Paper Company, Ltd., of which concerns he is the chief Canadian executive. Mr. Clarke says that one of the bright spots in England at the present time is the condition of the news print industry. Most of the news print mills are well supplied with orders and are running full time. He further says that there is a possibility that some of the London papers may increase their size in the near future.

St. Lawrence Paper Co. Orders Fuel System

St. Lawrence Paper Company, Three Rivers, Que., has purchased from the Combustion Engineering Corporation, Ltd., a Lopulco pulverized fuel system to be used in conjunction with a new 6180 square feet B & W boiler as an addition to its plants.

The contract includes horizontal and rear wall water screens, Murray Fin side walls, a C. E. plate air heater, 2 No. 5 Imp Mills each direct driven by 60 h.p. motor.

The guaranteed overall efficiency on this unit by the month at 200 per cent of rating is 82 per cent. Test efficiency 84.5.

Sandy Hill Iron Works Election

At the annual meeting of The Sandy Hill Iron and Brass Works, Hudson Falls, N. Y., held last Friday the following directors were elected for the ensuing year; A. J. Kennedy, R. C. Tefft, Jr., C. W. Kellogg, H. L. Broughton and J. M. Ferris.

Followed by a directors' meeting the following officers were chosen for the ensuing year: A. J. Kennedy, President; R. C. Tefft, Jr., Vice President; J. M. Ferris, Secretary-Treasurer.

Color of Paper Fillers

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 13, 1925.—The Bureau of Standards has recently completed color measurements of samples representative of average commercial materials used as paper fillers. Discussing the color of paper fillers in detail the Bureau continues:

The measurements were made with the Pfund colorimeter, modified as found necessary for material of this nature. All samples were tested as dry powder, the sample holder being constructed of brass boxes with optional glass over the reflecting surfaces of the material, this arrangement being necessary to support the material in the upper holder and to give uniform test surfaces. In order to counteract any selective absorption of the glass covers, a piece of the same glass was placed between the ground-glass mirror and the light source. The upper glass cover had a round hole, somewhat less than one-half inch in diameter, in its center to permit unobstructed reflection of light from the material under test into the optical cube of the colorimeter. A complete description of the Pfund colorimeter as originally designed is given in Bureau of Standards Technologic Paper No. 244.

The results are given in the following table. A sample of chemically pure magnesium oxide is included for comparison. The values in the total column are the sum of the reflection values for red, green, and blue light, and indicate the total relative brightness of each sample; that is, the relative quantity of light reflected by each sample.

The quality of light reflected by each sample is indicated as "per cent reflection" for each color of light. The ideal material would reflect equal percentages of each color, which, in these cases, would be 33⅓ per cent. The departure, therefore, of each sample from this value indicates the extent of departure from whiteness as regards each color and therefore shows the hue of the sample.

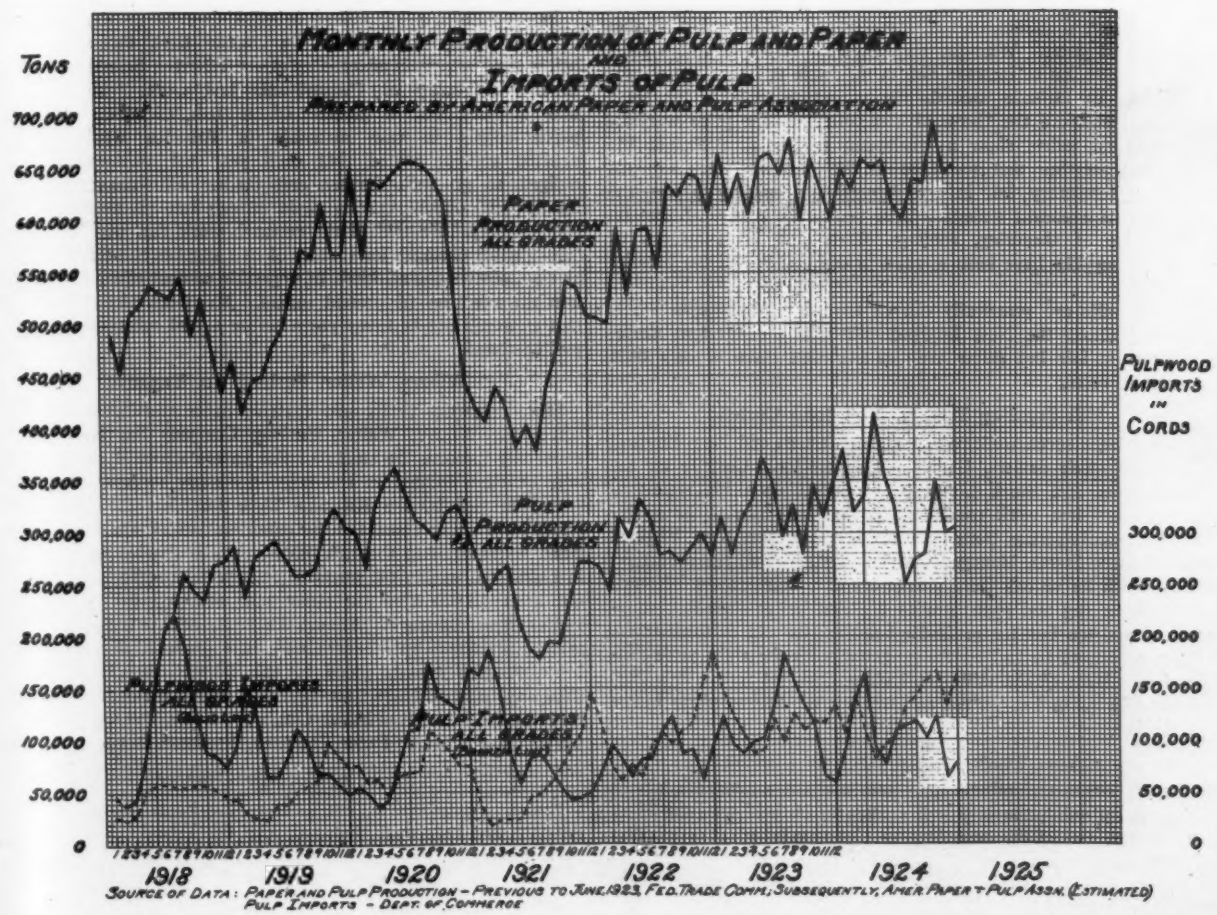
COLOR MEASUREMENTS OF PAPER FILLERS

Kind of material	Sample number	Reflection value for each color: Red	Green	Blue	Total relative brightness	Reflection for each color: Red %	Green %	Blue %
Asbestine ...	1	0.924	0.901	0.862	2.687	34.4	33.5	32.1
Clay	2	.896	.842	.769	2.507	35.7	33.6	30.7
Gypsum	3	.966	.923	.883	2.772	34.9	33.3	31.8
Clay	4	.941	.890	.813	2.644	35.5	33.6	30.9
Crown filler.	5	.986	.966	.934	2.886	34.2	33.5	32.3
Talc	6	.927	.908	.861	2.696	34.4	33.7	31.9
Clay	7	.801	.750	.706	2.257	35.5	33.2	31.3
Gypsum	8	.844	.818	.784	2.446	34.5	33.4	32.1
Clay	9	.934	.880	.804	2.618	35.7	33.6	30.7
Magnesium oxide	10	.946	.924	.900	2.770	34.2	33.3	32.5

Paper Production Since 1918

The chart presented herewith has been issued by the American Paper and Pulp Association and indicates the estimate of pulp and paper production since 1918.

These figures are based on the reports of the Federal Trade Commission to June, 1923. The curves for 1923 and 1924 are plotted from the data of the American Paper and Pulp Association's monthly statistical summaries "stepped up" in accord with the complete figures of the Census Bureau for 1923.



Philadelphia Trade Encouraged by Brighter Prospects

Paper Market Showing Indications of Uplift Which Extends to Both Fine and Coarse Paper Groups—John Costello Tells of Conditions at New England and Western Mills—Fine Paper Division Elects Trades Relation Committee—Wilcox, Walter, Furlong Co. Adds to Its Lines

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 11, 1925.—A brighter business attitude was assumed during the week just passed by the general paper trade and with it the dealers were encouraged in their outlook for the future. This brighter prospect for the paper distribution trade was quite in keeping with the numerous optimistic reports emanating from all lines of industries in this city and from various sections of the country regarding the upward trend of industry in anticipation of brisk Fall business. While the general trade was slightly more active in so far as present day demands were concerned the most hopeful side of the week's course was in the frequent calls for quotations for future deliveries. Both the fine paper and coarse grades were among the needs for which future quotations were requested.

Recovery of the fine paper group from the less active status of the past few weeks was practically evidenced in the brisker demand for immediate deliveries of all the grades of printings and writings. While the buying was of a hand to mouth character it nevertheless was of broader scope than has been noted within recent days.

Coarse Papers Show Improvement

With the slightly improved demand which made its appearance in the standard grades of the coarse papers there was a firming tendency in prices. With the announcement of the Southern mills of their intention to increase Krafts the trade has been more optimistic in its attitude towards the immediate outlook for these grades, heretofore the "bone of contention" in the price warfare. Tissues and toilets show a weakening tendency. Although the inclement weather that prevailed in the previous week brought about a temporary lull in the demand for building papers the seasonal requirements generally have been very heavy. Prices on all grades of sheathing, roofings, fillers and other grades of builders' supplies have been upward in consequence of the broader demand.

Local mills are practically out of the market for paper stock. Demand among the New England mills and the Western manufacturers is fair but prices are so low that there is very little margin of profit.

Mill Stocking Described by John Costello

Following a seven week round of the Western and New England mills and stock dealers, General Manager John Costello of the Penn Paper and Stock Company, reported upon his return to headquarters last week conditions in the stock market in so far as the manufacturing trade is concerned. In the New England and Western States, Manager Costello found that all the prominent mills which he visited, were purchasers of a fair amount of stock in both the rag and paper grades but that prices were not satisfactory and too low for profitable handling for out of town trade. Business was to be had by the go-getter with the right price concessions. Most of the mills are looking forward to a heavy Fall demand for paper but are not as optimistic of the immediate future of the industry.

Paper Trade-Graphic Art Golf Contest

Paper dealers and other supply men and the master printers of Philadelphia will unite in a golf contest to be held on June 23 at the Merion Golf Club according to plans perfected at a meeting of the representatives of the type and press and the paper distributors held last Friday. This will be the second annual event of this outdoor sporting contest to be held by the united industries of the Graphic Arts in this city. The Paper Trade Golf Association will present its cup to the winning contestants. The cup is offered annually to any member of either the printers or paper trade organizations with the proviso that whichever Club wins the award twice out of three tournaments will eventually retain it as a permanent trophy. In last year's contest, the first to have been held, the winner was among the paper trade representatives.

Trades Relation Committee Elected

Members of the Philadelphia Paper Trade Association, Fine Paper Division, met last week at the Bourse Restaurant and there elected the following members to serve on the Trades Relation Committee for the year:—Norbert A. Considine, Paper House of Pennsylvania; David Lindsay, Jr., Lindsay Brothers; William Wilcox, Wilcox, Walter, Furlong Company and Howard Satterthwaite of the Satterthwaite Paper Company. All these trade associates were re-elected and will shortly meet to elect a chairman. There is being sent out to the trade an announcement of the coming annual election of officers to be held on Friday of this week at the Chamber of Commerce.

Paper Scarcity Predicted by Leon Beck

Prospects of a paper famine in the United States were discussed by Leon Beck, President of the Charles Beck Paper Company, before the students in advertising at the Wharton School of Finance in the University of Pennsylvania last week. He predicted that it was but a matter of a few decades before the paper supply in raw materials in America would be exhausted and he stated that each year the manufacturer was obliged to go back farther and farther into unknown forests for his pulp supply, making rapid inroads into all available material for pulp. He told of the research work that was being done among paper chemists for sources of new supplies and materials such as rags, straws and all kinds of vegetable content which today enter into the mixtures of present makes. Mr. Beck stressed the fact that it would not be many years before a real substitute for paper will be found.

Wilcox, Walter, Furlong Co. Expands

Since removing to its new massive paper warehouse and sales offices the Wilcox, Walter, Furlong Company has been able to materially increase the stocks of fine papers which it carries. The new quarters located in the large six story structure for many years occupied by the Keystone Type Founders at 17-19 S. 6th street gave ample room for the extensions which the firm planned when it removed to the new home. There now is being carried in stock just double the quantity of papers formerly stored in the old home at 231 Chestnut street now occupied by the Satterthwaite Paper Company. Among the latest additions to the line of mills represented by the firm and their products are the Athena Plate, English Finish, made by the Tileston and Hollingsworth Company, Boston, Mass.; the Defender Bonds, a rag content paper, made by the Fox River Paper Company; Neapolitan Cover, a product of the Peninsular Paper Company, Ypsilanti, Mich.

Norbert A. Considine Honored

Norbert A. Considine, President of the Paper House of Pennsylvania, has been again honored with the Vice Presidency of the Poor Richard Club, at the annual election of officers of that advertising men's organization last week.

MATHIESON System

The Practical Usefulness of Engineering Vision

THREE years ago the Mathieson Company, unaided and with all its resources, undertook the development of a multiple unit tank car for the larger consumer of Liquid Chlorine—an achievement in Chlorine equipment originating in the broad vision and foresight of the Company's engineers and executives.

The scope of that engineering vision included not only the advantages of the ton container to the tank car user of Liquid Chlorine (who existed at that time only in the paper industry) and to the user of standard cylinder equipment, but also the adaptability of this car to consuming problems not then even recognized by other producers.

Now, in April of this year, the Department of Water Supply of the City of New York discontinued their consumption of Liquid Chlorine in cylinders at Ashokan and began chlorination from shipments received in the Mathieson Multi-Unit Tank Car—*the first municipality to adopt this economy.*

By July first of this year, six of the leading textile mills in the progressive Southern manufacturing field will be using this type of equipment for bleaching with Liquid Chlorine.

The story of the world search for Bromine and of the Dupont Company's equipment of the seagoing ship "Ethyl" with chlorination apparatus, is not complete without mention of the fact that she went to sea supplied with Liquid Chlorine in ton containers.

An organization that is conspicuous for such broad and practical vision is of service, first to its customers, and second to the consumer at large. The development of this convenient and economical Chlorine equipment has, in itself, made many new friends for the Mathieson Company; the problems of users of other industrial chemicals, in any field and in any quantity, are assured the same intelligent study and attention.

The MATHIESON ALKALI WORKS Inc.
250 PARK AVE. NEW YORK CITY
PHILADELPHIA CHICAGO PROVIDENCE CHARLOTTE

EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Caustic Soda - Liquid Chlorine
Bicarbonate of Soda
Anhydrous Ammonia
Soda Ash - Bleaching Powder
Modified Virginia Soda
Aqua Ammonia

Busier Days Arrive for Toronto Book Paper Market

Price Readjustment Made to Meet Rivalry on Certain Imported Lines—Paper Box Manufacturers Hold Quarterly Meeting—Ferguson Government Refuses E. W. Backus Further Concessions—Dominion Envelopes and Cartons, Ltd., Reports Good Year's Business

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 11, 1925.—At last there has been some change in the book paper market, the mills getting busier on contract business and the size and quantity of other orders showing an increase. There has also been a reduction of a quarter of a cent on book papers of certain grades, this readjustment taking place, not because manufacturing or other costs have been reduced, but to meet rivalry on certain imported lines, which have become highly competitive.

There has also been a change for the better in board and the mills report that trade is in stronger shape. Canadian plants are producing products of a higher quality and as a result, there is less competition from outside sources. Plants are now operating at about seventy-five per cent capacity.

The market for kraft paper is fairly satisfactory.

In the rag and paper stock arena, owing to the rather low prices that prevail and diminished collections, dealers declare that trade is only fair, with just sufficient material on hand to take care of the demand. A sudden increase in business would be marked by an advance in price. Coated paper mills report very good turnover at the present time and plants are busier than they have been for several weeks. In other lines in the paper market there is not much change and a betterment would be welcomed. Dealers and manufacturers are hopeful that, with settled weather conditions, the outlook will considerably brighten within the next few weeks.

Paper Box Dealers Meet in Galt

Representative paper box manufacturers from various cities in Ontario met in Galt recently when the regular quarterly meeting of the Toronto Carton Club was held. One feature of the gathering was a timely paper on "Special Service," which dealt favorably with the principle of charging the customer for all art work and other expenses in connection with sample boxes. After the business session, a dinner was enjoyed at the Galt Club, when an interesting address was delivered by R. E. Knowles, followed by an excellent musical program.

Mr. Backus Refused Any More Concessions

It is officially announced that E. W. Backus, who recently had an interview with the Ferguson government, has been refused any more timber or pulpwood concessions in the province. Word from Fort William intimates that the Great Lakes Paper Company, in which Mr. Backus is much interested, will go ahead with the erection of a two hundred ton news print mill. Mr. Backus will also carry out his proposed extensions to the paper mill at Kenora and the work proposed at Fort Frances, for which a reorganization of his interests is now being conducted in the shape of a sixteen million dollars, first mortgage bond issue.

Days of Price Haggling Are Gone

N. L. Martin, of Toronto, general secretary of the Canadian Paper Trade Association, has sent out an interesting letter to the members in which he says in part:—"By the publication of a price list in which the selling price of the goods we handle is set out in plain figures calculated as an honest mark-up, the paper merchants of Canada have followed a sound and fundamental policy—a customer, who would never think of haggling with a store keeper over the price of a collar, still lies awake nights trying to figure out what tale he can tell a salesman to induce him to sell a ream of paper on the basis of a car lot order. Why should a paper merchant have less courage than a haberdasher? Once being satisfied that our prices are fair, why should there be any talk of lowering them? Why should not each of us let our customers know that the old days of price haggling are gone forever?"

Plant at Cornwall Nearly Completed

The new plant of Courtaulds, Limited, at Cornwall, Ont., which will manufacture artificial silk from wood fiber or pulp, will soon be in operation. N. Linnett, factory manager, has arrived from the English works of the company and the heads of other departments are expected in the near future. The necessary machinery is now being installed and will be ready for operation some time during the coming month.

Company Had Splendid Year's Business

The annual meeting of the Dominion Envelopes and Cartons, Limited, Toronto, was held recently and E. Newell, Managing Director, reported that the firm had had a splendid year of business, in view of conditions during 1924. Mr. Newell was re-elected President and Managing Director; E. G. Thedford, Vice President, and H. Breckenridge, Secretary-Treasurer. The company has just completed a large extension, which is now being occupied. The basement is being used for the turning out of cartons and the space on the other flats for general offices and warehouse purposes.

Notes and Jottings of the Industry

Harold Crabtree, of Montreal, secretary of the Howard Smith Paper Mills, was in Toronto last week on business.

The Fielder Paper Box Company, 170 Berkeley St., recently enlarged its business office and improved the appearance of the surroundings which are now very attractive.

Dan Daverin of the Daverin Paper Mills, Camden East, Ont., who was in Toronto lately, states that the plant will start operation in the near future and turn out book papers.

G. E. Farlinger, of Sioux Lookout, Ont., who is interested in Nipigon Products, Limited, Macdiarmid, Ont., was a business visitor to Toronto during the past week.

G. S. Gaylord, President of the Menasha Printing and Carton Company, Menasha, Wis., was in Toronto lately calling upon the trade.

I. H. Weldon, President of the Provincial Paper Mills, Toronto, and Mrs. Weldon, who have been spending some time on the Pacific Coast, have returned home.

A charter has been granted to the McGregor Paper Boxes, Limited, Toronto, with an authorized capital of $40,000, to make and deal in all kinds of paper boxes, packages, cartons, etc.

The Canadian Seaman Container Corporation, Toronto, was recently incorporated to manufacture containers of all kinds from wood fiber or similar material and import or export the same. The authorized capital of the firm is $75,000. A. J. Manley, R. L. Moorehouse, and W. A. Mitchell, all of Sudbury, Ont., are among the incorporators of the company.

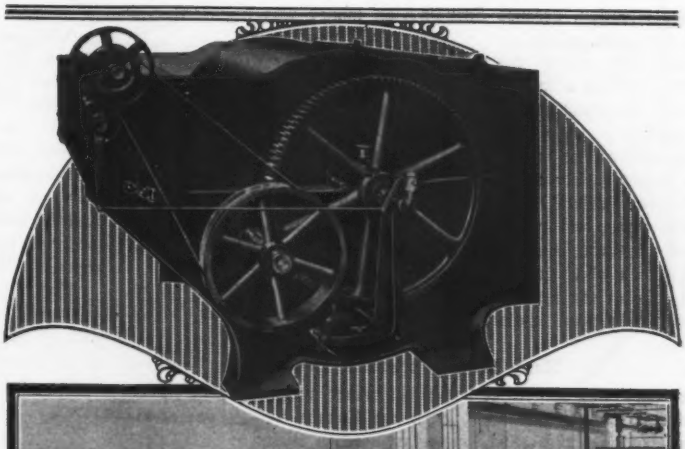
N. L. Martin, of Toronto, secretary of the Canadian Paper Trade Association, and T. J. Macabe, of Buntin, Reid Company, wholesale paper dealers, Toronto, were in Ottawa this week attending a meeting of Canadian business men addressed by Sir Glyn-Jones of London, Eng.

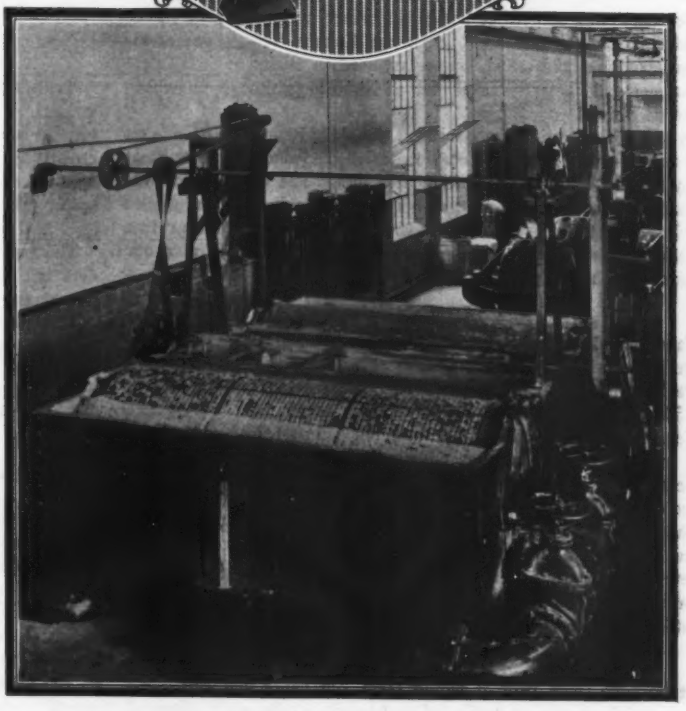
J. H. Black, of Toronto, President of the Great Lakes Paper Company, Fort William, was lately elected a director of the Canadian General Electric Company to fill the vacancy caused by the death of Sir William Price, of Quebec.

The Carthage Machine Company, the Canadian branch of which is located at Belleville, Ont., is very busy at present and a night shift has been put on in order to take care of the enlarged output.

An investment yielding a high rate of interest

A BIRD SAVE-ALL





A Bird Save-All is a sound investment that yields a high rate of interest. Nine cases out of ten the stock recovered pays all costs of the installation in less than a year—a dividend return of over 100 per cent. Often it is much more. And this rate of return continues for many years.

A Bird Save-All detects leaks in the stock handling system, one of which might easily cost more than the Save-All.

A Bird Save-All is built to stand the racket. Wires are long lived. It can be kept at highest efficiency with very little attention. Ask for catalog..

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SOUTH WALPOLE ~ MASSACHUSETTS

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T. H. Savery, Jr., 1524 Republic Bldg.
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Canadian Builders of Bird Machinery
Canadian Ingersoll-Rand Co., Limited
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7699

French Paper Market Found 1924 Unprofitable Year

At the beginning of 1924, the fall of the franc, the result of speculation on the part of people of bad faith, completely upset the paper business.

The market rates for raw material had an upward tendency, with the exception of wood pulps, but for the latter nothing was changed in the situation, because Scandinavian money was higher than it had ever been before.

The technicians of the paper industry, in order to buy as little cellulose abroad as possible, used all the resources of the experience at their command so as to turn out good paper with as little pulp as possible.

The fall of the franc brought to France an army of foreigners who sought to buy everything they could.

The rag dealers' Commission called together the representatives of the paper and rag industry to put an end to the exodus of mixed rags and reduce in so far as possible the intensive export of dark cotton which caused the rates to soar to fantastic prices.

In spite of the rate of our money as compared with that of the pound sterling and dollar, imported paper continued to flood our market.

Many Mills Worked at Loss

February was somewhat better for paper and cardboard manufacturers. On the one hand, exchange became a little more stabilized and on the other, important orders were a little more numerous and factories asked for a fairly long time in which to make delivery.

In spite of this slight improvement, the actual state of the market did not permit of prices being materially advanced and a great many French mills were working at a loss. The Government was requested to adopt measures to improve our financial situation and eliminate squandering; it was advocated to stop purchasing raw material almost entirely and buyers were encouraged to turn to our colonies for their supplies of pulpwood.

Raw Materials Advance

Raw material continued to advance in price, with the exception of cellulose which went down another few crowns per ton.

Dark cottons, which the preceding month could still be had at Fr. 50 per 100 kilos, now sold for as high as Fr. 80.

Now that the pound sterling had reached 100 frs., old papers sold more and white cuttings advanced continuously.

Nearly every paper manufacturer advised customers of an advance of from 5 to 10 per cent.

The Swedish crown went over the 6 franc mark, making purchases of chemical and mechanical pulps very costly.

Several paper mills were of the opinion that it was better to refrain from accepting important orders, for fear pulps might go up still further because of the depreciation of the franc.

Flood of Orders in March

At no time since 1918, it would seem, did paper and cardboard mills receive such a quantity of orders as in the early days of March. However, certain representatives are of the opinion that business was quiet and customers fought energetically against the advance in price, an advance that was entirely justified by conditions.

The Swedish crown went over the 7 franc mark and a number of mills that had no chemical and mechanical pulp on hand were obliged to purchase at fabulous prices.

On the other hand, because of the recent lock-out of the Norwegian paper pulp mills, there was a certain scarcity of merchandise, making it possible for Swedish, Norwegian, Finnish and other exporters to increase prices, an oportunity for which they had long been waiting and which was furnished them by the lock-out.

At that time, French news paper cost less than the imported product.

Even the Germans were unable to compete with French manufacturers and wanted to buy all sorts of paper and merchandise.

Franc Begins Coming Back

After the middle of March, we witnessed a characteristic phenomenon: the sudden strength of the franc, regarding which our enemies of yesterday, our friends and even a certain number of unpatriotic Frenchmen were being decidedly pessimistic.

This rise was disconcerting to world opinion, paralyzed the conspiracy organized against our paper money by men of no faith and no country, and once again proved the exceptional coolness of our race when confronted by danger. The battle was a hard one and the forces marshalled were very powerful. The enemies of our progress hesitated at nothing: false rumors, misstatements as to rates, (as high as 135 francs for the pound sterling), etc.

Wholesale rag dealers offered goods at the time at a 20 per cent reduction. Those who had stocks on hand became anxious. The fall of Scandinavian and Norwegian crowns made it possible to obtain supplies at advantageous rates.

The decline of the Italian lire which at one time went up over the franc, enabled purchasers to buy mechanical pulp at Fiume.

Market Grows More Stable

With the rise of the franc the market became a little more stable. Price of coal was higher than last year and wages also advanced considerably; several mills bought pulp when the Swedish crowns was worth about Fr. 6.50. This led one to suppose that prices for paper would remain at the present level for a long time to come, for the factors mentioned above were not such as to produce any material decline, at least in the near future.

The paper market was quiet. Mills still had a number of orders left over from preceding months, but they did not enter any new ones.

The Germans, who wanted to buy paper of every sort from us when the pound sterling was at Fr. 115, now offered newspaper at Frs. 120 C. I. F. Rouen. If to this price are added Customs, import duty, loading on cars and contingencies, it will be seen that French manufacturers were able to deliver as cheaply as the Germans.

May Brings a Lull

At the beginning of May 1924, there was a general lull in business: industrial merchants, business men and financiers are all of the same opinion.

It is certain that with the decrease in price of raw material, the volume of transactions was far smaller.

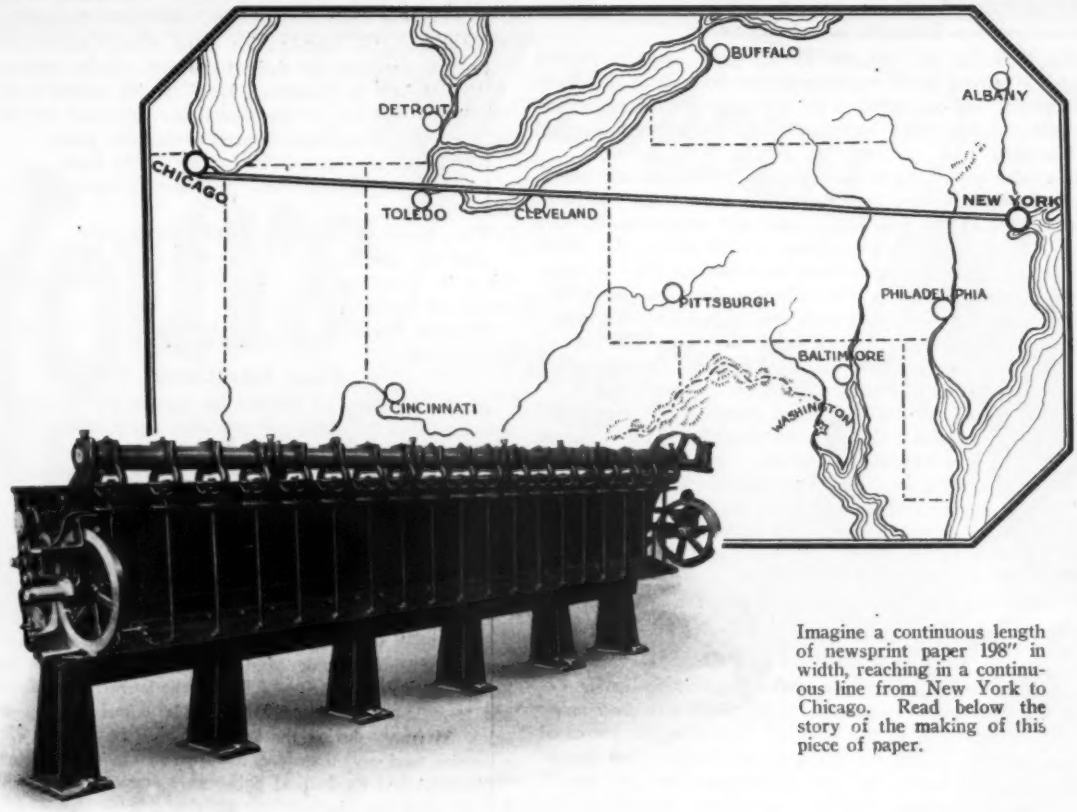
On the other hand, foreign transactions, which had become rather alarming inasmuch as stocks were dwindling very rapidly, declined visibly in number.

Those paper mills that use rags exclusively complained bitterly of the advance on a certain quality: 300 per cent in less than 6 months, whereas prices for the finished product barely went up 20 per cent.

The coming into power of a socialist government disturbed confidence. After May 11th,—Election Day—the pound sterling, which had gone down to 67 francs, went up continuously until it reached 80 francs.

Workmen thought they were masters of the situation and could not be made to understand the difficulties industry had to contend with, especially due to the shortage of labor which compelled mill owners to resort more and more to foreign labor.

Workmen would openly boast that they were masters of the streets, when they should have realized that it is only through order and work that we shall be able to emerge victoriously from the economic struggle in which the entire world is engaged and



Imagine a continuous length of newsprint paper 198" in width, reaching in a continuous line from New York to Chicago. Read below the story of the making of this piece of paper.

Seven Hundred Miles *of* Print Paper

Without a Single Break

Running continuously for three days and three nights, March 16, 17, 18, the Algonquin Paper Company at Ogdensburg, New York, produced seven hundred miles of newsprint paper without a break.

In other words this mill made a continuous sheet of paper, 198 inches wide, which would stretch cross country from Chicago to New York. During these three days a maximum twenty-four hour production of 123 tons was reached with an average daily run of 100.46 tons. The run for the week totaled 603 tons, the average speed was 780 F. P. M.

This remarkable record was made on a 206 inch Bagley & Sewell Fourdrinier machine equipped with a *Voith High Pressure Inlet.*

The men in charge of the machine and the machine itself must, of course, receive due credit for their performance, but the *Voith High Pressure Stock Inlet* played a very important part in hanging up this record.

This remarkable piece of new equipment eliminates all foam spots and lumps, two of the main causes for breaks. It moreover makes the sheet uniform in thickness across the entire width of the wire.

By making possible the use of the entire wire surface a better and stronger formation results, and the stock can be fed to the wire at *any speed desired.*

We have ready for you an attractive booklet giving full particulars about the Voith High Pressure Stock Inlet. Write us for it today.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: **350 Madison Ave.**

which has brought about a condition of terrible egoism in every industrial nation, towards any possible competitor.

Situation Getting Worse

At the beginning of June, the French paper situation showed tendencies of getting worse and transactions were fewer and fewer This stagnation was attributed to the holidays—Ascension Day and Whitsuntide—during which buyers and consumers left the capital for a few days.

Certain mills were in the throes of financial difficulties, and whereas at the beginning of the year a number of merchants wanted to buy paper mills, at this time many paper mill owners would have liked to get rid of their plants. Some of the reasons for which certain owners would like to sell are the troublous times in which we are living and particularly labor difficulties due to the generalization of the eight-hour law and insufficiency of customs protection.

If it is recalled that in 1913 we imported in all 11,925 tons of paper and during the first four months of this year Germany alone sent us over 15,000 tons, there was cause for real anxiety.

Prices for pulps were still weak and rags and old papers had not appreciably changed. Cuttings and English mixtures started coming in again in considerable quantities.

We notice that there was very little unemployment. According to statistics, during the first week in June, the number of workmen who received relief money was anly 600, against 1 million in England and 300,000 in Italy. On the other hand, 5,000 foreign workers entered France; therefore, the 600 workmen entered on the lists of the unemployed represent the class of people who are looking for work and hope they will find none.

Lack of Confidence Is Felt

At the beginning of July a new and unexpected tension in exchanges was observed. The principal cause given was the number of bills in the portfolio of the Bank of France, which increased more than a billion during the last week of the preceding month. It would have been better, however, to attribute this condition of affairs to lack of confidence, not only in business, but also on the part of the public. To date, the government had merely followed a policy of promises, which unsurmountable difficulties will make it impossible to keep.

Prices for rags remained stationary and wholesale merchants hoped for a new tension in exchange enabling them to resume mass exportation, as at the beginning of the year.

A historical event which occurred during the month of July should be mentioned: the opening of a mill at La Traille for the manufacture of bleached alfa pulps. In a few years this mill will launch on the French market enormous quantities of alfa pulp, which will considerably reduce our foreign imports.

Prices for paper were somewhat firmer and demand was a little better, in spite of the uncertainty of the period.

England continued to flood our market with old papers notwithstanding the increase in the rate of the pound sterling.

Raw material for paper, such as felt, linen, beltings, remained unchanged. Certain efforts were made on the part of foreign firms to introduce into France material for loading ordinary paper and even cigarette paper, but they met with little success.

Commercial Treaty Talk

The month of August brought no material change in the situation of the paper industry and business. There was some talk of the signing of a commercial treaty with Germany, in view of the expiration by the month of January of certain clauses in the Treaty of Versailles.

Skilled labor was still scarce in the paper industry, and foreign labor was resorted to more and more.

Scarcely any unemployment; 480 unemployed only entered on the official lists and 3,500 workers who entered France.

The vacation period limited transactions and mills worked part time.

During the month of September, Germany almost generated the method of quoting her goods in dollars, which makes is impossible to obtain German cellulose at advantageous prices. In spite of the firmness of rates for Scandinavian pulps, French manufacturers were obliged to purchase, for their stocks were almost exhausted.

The Minister of Commerce, Mr. Raynaldi, caused to be approved the list of members of the commission appointed for the purpose of negotiating the Franco-German commercial treaty.

The pound sterling stabilized at around 84 francs.

Rosins went up continuously and supplies became more and more difficult to get.

Felts, linens and beltings remained unchanged.

Coal was abundant and it was easy to get French coal at about 80 to 90 francs per ton, taken at the mines, and English coal at about 100 francs C. I. F.

Generally speaking, the trend of the market during September was normal.

Prices Take Upward Leap

At the beginning of October the market was stationary. Paper increased 5 to 10 francs per 100 kilos and customers did not protest. Old papers and rags were firm, in spite of lack of sales. Felt manufacturers applied a 20 per cent advance and rosins reached the price of 138 francs.

The publishers of the principal dailies convened at a general meeting to examine the question of an advance in the price of newspapers, because of the cost of paper, which is now five times that of pre-war days.

It was believed that an accord with Germany regarding the customs tariff would be very difficult to bring about, because of the uncompromising attitude of the Germans. While the matter was being negotiated in Paris and Berlin, the business world was waiting and transactions were almost nil. The pound sterling which was below 86 francs during the last fortnight, went up to 87; there is a decided tendency, therefore, towards increased prices for paper.

Chemical and mechanical pulps were stationary and sellers were less exacting than the previous month.

While France was slowly and at her own expense repairing her devastated mines and mills, Germany started new works on a gigantic scale, almost all of them at the expense of the Reich. In spite of this, German negotiators asked for the clause of the most favored nation.

Not a Profitable Year

The month of December, in the paper business, has always been one of waiting, because consumers in so far as possible avoid stocking up on account of inventories, which are taken at the end of the year. The international situation is as uncertain as it was in January; the recent events in Egypt, particularly, threatened to shake the foundations of peace which it has been sought to consolidate for the past four years.

The question of supplies of raw material and coal is giving no trouble, but labor is still a serious matter.

The rates for coal are still fairly high and phormiums which were scarcely paid 25 frs. in January, now exceed 50 francs.

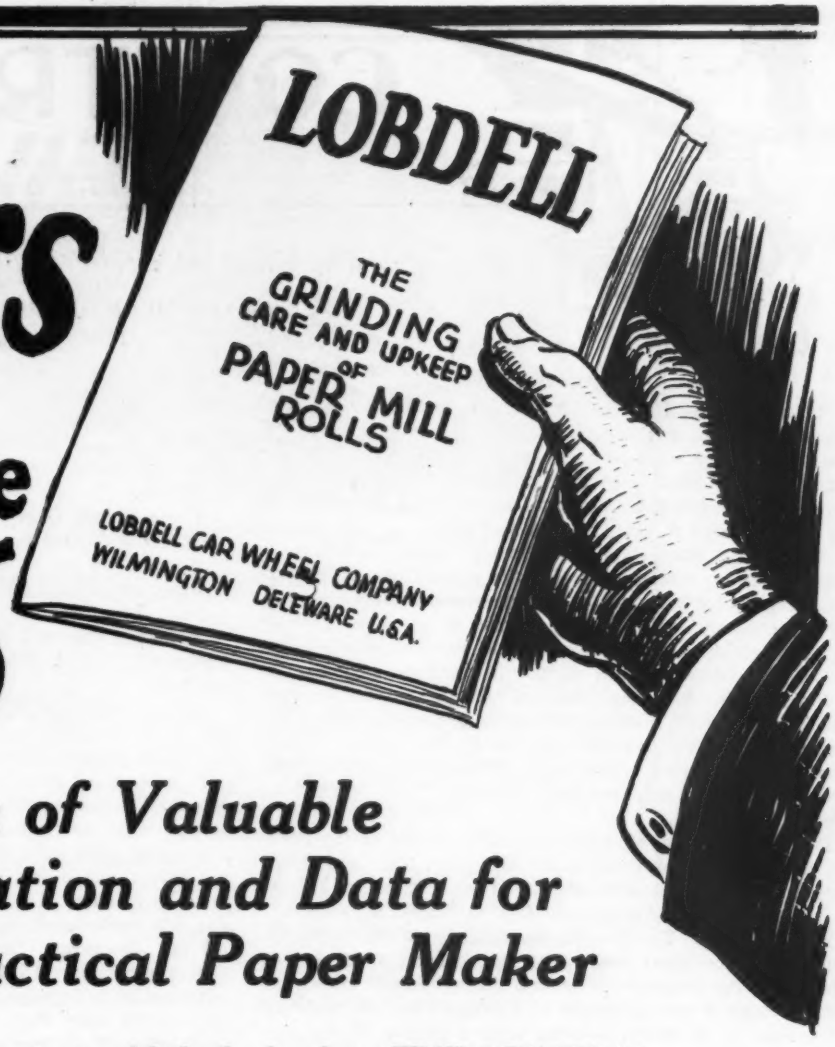
Generally speaking, the paper situation during 1924 has not been a brilliant one and there are few mills that can boast of real profits. Throughout the year and everywhere numerous difficulties arose due to the lack of stability of exchanges, scarcity of labor, high cost of raw material and the handicaps placed in the way of commerce and industry by unjustified laws and decrees.

Discontinues Investigation

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., May 13 1925.—The Interstate Commerce Commission has announced that it has discontinued its investigation regarding rates on wrapping paper and paper bags from and to Vacouver, Washington, and Portland, Oregon.

Yours for the Asking



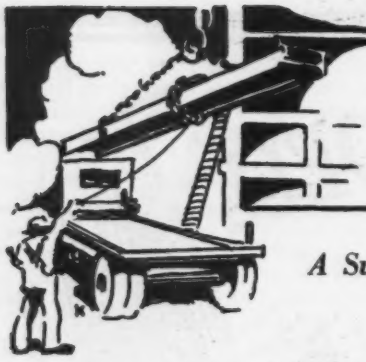
A Book of Valuable Information and Data for the Practical Paper Maker

We have just published a book on THE GRINDING, CARE AND UPKEEP OF PAPER MILL ROLLS.

It is compiled from the facts and data accumulated in our many years' experience in the manufacture of chilled rolls and contains much information that will assist the paper mill operator to better the quality of his product and at the same time reduce maintenance costs.

Please write for your copy at once.

LOBDELL CAR WHEEL CO.
Wilmington, Delaware, U. S. A.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Toledo, Ohio—The Spitzer Paper Box Company, 3951 Monroe Avenue, has completed plans and will proceed with the construction of a new one and two-story and basement plant, at 3061 Monroe avenue, to be 35 x 120 ft., estimated to cost about $50,000. A general contract has been awarded to H. J. Spieker & Co., Elm Street, Toledo.

Woronoco, Mass.—The Strathmore Paper Company is taking bids on revised plans for the construction of its proposed new plant addition for storage and distributing service, to be four-story, 42 x 200 ft., to cost in excess of $100,000. It is expected to award contract and proceed with erection at an early date. Lyman Howes is company engineer.

Philadelphia, Pa.—The National Decalcomania Company, 240 North Sixtieth Street, manufacturer of paper products, has awarded a general building contract to the George Kessler Contracting Company, 1733 North Marvaine Street, for the construction of a new one-story addition. Plans have been filed.

Dallas, Tex.—Fire, May 3, destroyed a portion of the building of the American Paper Stock Company, 916 South Pearl Street, South Dallas, with loss reported at close to $12,000. It is planned to rebuild at an early date. A. Kaplan is president.

Watertown, N. Y.—The St. Regis Paper Company is reported to have plans under way for general expansion in operations, the program to include its subsidiary known as the St. Regis Paper Company of Canada, Ltd. A preferred stock issue of $1,260,000 is being sold, a portion of the proceeds to be used for the purpose noted. R. B. Maltby is vice-president.

Philadelphia, Pa.—The Adelphia Paper Box Company, American and Jefferson Streets, has concluded negotiations for the purchase of a group of factory buildings at Columbia Avenue and Mascher Street, for a stated consideration of $42,500. The new owner plans to remodel and improve the structures and to occupy for manufacture at an early date.

Philadelphia, Pa.—The Security Bank Note Company, 223 Chestnut Street, manufacturer of paper specialties, has awarded a general building contract to the F. A. Havens Company, 845 North Nineteenth Street, for the construction of its proposed new factory at Fifty-fifth and Sansom Streets. It will be three-story and basement, brick and reinforced-concrete, 83 x 136 ft., estimated to cost about $125,000, with equipment. Clarence E. Wunder, 1520 Locust Street, is architect.

Kalama, Wash.—The Lewis River Pulp & Paper Company has foundations in progress for the initial buildings of its proposed local mill, and plans to commence superstructure work in the near future. The new plant will comprise a group of buildings, reported to cost more than $500,000, with machinery.

San Francisco, Cal.—The Zellerbach Paper Company has work under way on a new six-story and basement building at Sansom and Clay Streets, designed primarily for storage and distributing service, and purposes to have the structure ready for service at an early date. It is reported to cost close to $200,000. Barrett & Hilp, 918 Harrison Street, are the general contractors. O'Brien Brothers, 318 Sansom Street are architects.

Three Rivers, Que.—The St. Lawrence Paper Mills, Ltd., Montreal, will soon proceed with the construction of the proposed addition to its local paper mill, for which a general contract was awarded recently to the Foundation Company of Canada, Ltd., Montreal. The work will consist of a number of buildings, reported to cost more than $1,500,000 including equipment. F. O. White, St. Oliver Boulevard, Montreal, is engineer.

Kenora, Ont.—In connection with its expansion plans, the Minnesota & Ontario Paper Company, Minneapolis, Minn., will make extensions at its local mill, including the installation of a new paper machine for the production of news print, and auxiliary machinery. A contract has been placed for the new machine unit which will have a capacity of producing a sheet of news print 245 in. wide, on the basis of 1,100 ft. per minute, and orders will be given out for other machinery at an early date. The company is also reported to be planning for expansion at its other news print mills.

Petite Discharge, Que.—Price Brothers, Ltd., has commenced preliminary work on its proposed new pulp and paper mills, and plans to proceed with superstructure work on several units at an early date. The plant will be equipped for a rated output of 200 tons of news print per day, and is estimated to cost close to $5,000,000, complete.

New Companies

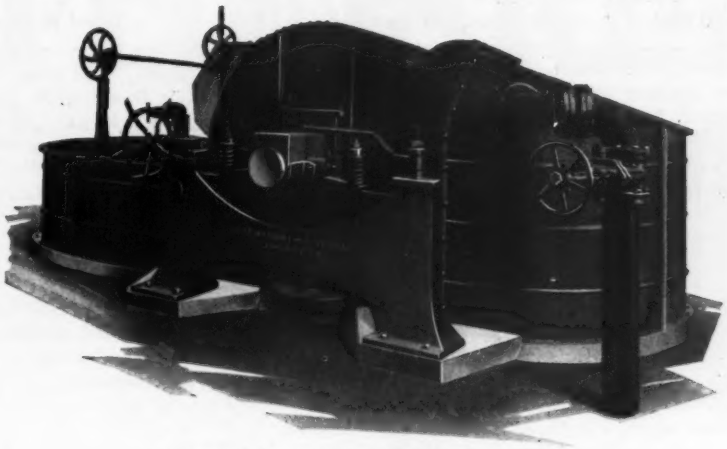
Baltimore, Md.—Matthews Brothers, Inc., 115 Hopkins Place, has been incorporated with a capital of 1,500 shares preferred stock, and 5,000 shares common stock, no par value, to manufacture and deal in paper boxes and containers. The incorporators are William A., Luther A., Claude V. and T. Raymond Matthews.

Chicago, Ill.—The Jones Paper Company, 467 Milwaukee Avenue, has been incorporated with a capital of $5,000, to manufacture and deal in paper products. The incorporators are Ralph N. Jones and Harold S. Clark. The company is represented by George C. Geier, 77 West Washington Street, Chicago.

Pittsburgh, Pa.—The Pittsburgh Corrugated Paper Box Company is being organized to manufacture paper boxes and other containers. The new company will be headed by H. W., and E. A. Hespenheide; and Walter E. Ahlers. Application for a state charter will be made on May 18. The company is represented by Leitch & Adelman, 919 Park Building, Pittsburgh.

Albany, N. Y.—The Albany Tablet Company, has been incorporated with a capital of $10,000, to manufacture and deal

"Your paper is made



The Dilts Approved NEW TYPE Beating Engine

in the beaters"

COMMON SENSE

prevails in the design and construction of the Dilts approved NEW TYPE beating engine.

SPEED is not attained here at the expense of power.

TRUE, this New Type beater circulates faster than ordinary beaters and handles stock of greater density but no more power is applied in so doing.

FREAK CONSTRUCTION has been avoided, and this approved NEW TYPE beater has no objectionable features: hence its unanimous approval and remarkable popularity.

Write us for all information

6538

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

in writing tablets and other paper specialties. The incorporators are T. V. Stowell, F. T. Taaffee and J. T. Healey. The company is represented by F. Pedlow, Albany, N. Y., attorney.

New York, N. Y.—The Whitehall Paper Mill, Inc., has been incorporated with a capital of $20,000, to manufacture paper products. The incorporators are B. Rosenberg, M. H. Kotzen and M. M. Siegel. The company is represented by Kotzf Brothers, 31 Chambers Street, New York.

Brooklyn, N. Y.—Z. Mazur & Sons, has been incorporated with a capital of 50 shares of stock, no par value, to manufacture and deal in paper specialties. The incorporators are E. Kauder and S. and I. Mazur. The company is represented by V. V. Ziprie, 309 Broadway, New York.

Fayetteville, N. C.—The Fayetteville Paper Company has been incorporated with a capital of $50,000, to manufacture and deal in paper products. A. G. Smith, Fayetteville, is the principal incorporator.

Pittsburgh, Pa.—Crosler & Elicker, Inc., has been incorporated with a nominal capital of $5,000, to deal in writing paper and other stationery products. The principal incorporator is C. W. Elicker, 1232 Faulkner street, Pittsburg.

Rochester, N. Y.—The R. & J. Paper Company, has been incorporated with a capital of $100,000, to manufacture paper products, etc. The incorporators are L. F. Houpf, F. J. Smith and F. A. Stevenson. The company is represented by Parker & Parker, Niagara Falls, N. Y.

New York, N. Y.—The Baxter-Lane Paper Corporation, has been incorporated with a capital of $150,000, to manufacture paper specialties. The incorporators are I. C. Noonan and H. V. Farrell. The company is represented by Graves, Miles & Hawger, 111 Broadway, New York.

El Paso, Tex.—The Western Paper Company has been incorporated with a capital of $75,000, to manufacture and deal in paper products The incorporators are Fred C. Lemley, 117 West Rio Grande street, El Paso, and Henning Bruhn; the first noted is the representative.

Jersey City, N. J.—John Doscher's Sons, 114 Lincoln street, have filed notice of organization to manufacture and deal in paper boxes and containers. The company is represented by Otto W. Doscher, 110 Manhattan avenue, Jersey City.

Financial

New Orleans, La.—The New Orleans Corrugated Box Factory, 3111 Bernadotte street, has filed notice of increase in capital from $500,000 to $750,000, for general expansion.

Kalamazoo, Mich.—The Standard Paper Company has filed notice of increase in capital from $720,000 to $800,000.

Corinth, N. Y.—Notice has been filed here of an increase in capital of the International Paper Company, New York, from $45,000,000 to $125,000,000.

Crocker, Burbank & Co. to Build Addition

FITCHBURG, Mass., May 11, 1925.—The contract for erection of a large addition to No. 8 mill of Crocker, Burbank & Co. was let last week to Wiley & Foss of this city, general contractors, according to an announcement by officials of the papermaking concern.

One section of the addition will be 300 feet long and 65 feet wide and will be used to house a 200-inch paper machine. The other section will be 320 feet long and 100 feet wide and will be used as a finishing room.

By installation of a 200-inch machine, Crocker, Burbank & Co. will possess the largest paper-making machine in this city, which has 15 paper mills. It will be one of the largest of machines for making of book paper.

The addition will be of brick, to correspond with the construction of the remainder of the mill. Work on the building will be started within a few days.

Obituary

David M. Drury

David M. Drury, one of the best known men identified with the pulp and paper industry, died Friday, May 10, at his late home, 1265 Bergen street, Brooklyn, N. Y. Mr. Drury was born in Birmingham, England in 1845 and came to this country when a lad of fifteen years. He immediately associated himself with the wire manufacturing branch of the industry. For nearly fifty years he represented the Eastwood Wire Manufacturing Company of Belleville, N. J., and during this time established a friendship throughout the entire industry which has remained steadfast. Three years ago he retired as salesmanager of the Eastwood Wire Manufacturing Company.

"Dave" Drury possessed a rare faculty among men, not only in the making of friends and retaining them but of never forgetting the name of any one whom he met. Many interesting anecdotes were related by him concerning the early builders of the industry.

Mr. Drury was an active member of the Masons in Brooklyn. Funeral services were held in the Greenpoint Masonic Temple on Sunday last, the interment being in the Cypress Hills Cemetery.

Michael Ludwig, Jr.

[FROM OUR REGULAR CORRESPONDENT.]

CHILLICOTHE, Ohio, May 9, 1925.—Michael Ludwig, Jr., aged 55, superintendent of the Mead Pulp and Paper Company plant here, died at the Johns Hopkins Hospital in Baltimore, Md., last week, according to word received here. He was taken to Baltimore for an operation, which was not performed due to his weakened condition.

Mr. Ludwig, a national authority on paper mills and paper manufacture, had been in the employ of the local plant for 42 years with the exception of about two years when he was employed in Columbus.

A wife, a son, Charles, his father Thomas Ludwig, Sr., 82, two brothers, Thomas J. Ludwig, Columbus florist, and Edward Ludwig, Chillicothe, and one sister, Mrs. Margaret Collum, 730 E. Fifth avenue, Columbus, survive.

Reception to Mr. and Mrs. M. O. Wood

[FROM OUR REGULAR CORRESPONDENT.]

PIERCEFIELD, N. Y., May 9, 1925.—Shortly before their departure from Piercefield, a reception was given in honor of Mr. and Mrs. M. O. Wood. The Community building was crowded with friends, employees and co-workers of Mr. Wood during his twelve years as manager of the Piercefield mill, and dancing was enjoyed until a late hour, Potter's five piece orchestra of Saranac Lake furnishing the music.

During the evening Prof. R. I. Banford, in behalf of the people of Piercefield, presented to Mr. Wood a diamond ring as a token of their esteem and good wishes and their appreciation of his years of faithful service among them, and to Mrs. Wood a fine leather travelling case fitted with amber toilet articles. The presentations were a surprise to both, and were accepted with expressions of sincere thanks and cordial good wishes for the continued success and happiness of all the people of the Community.

May Reduce Fire Hazard

The development of aeroplane patrol and the use of aeroplanes in fire fighting may be instrumental in removing one of the greatest handicaps on adequate reforestation by making planting arrangements more feasible and by reducing the hazard of timberland insurance.

Several insurance companies are now going into this matter and the Woodland Section is rendering such help as it can and placing its contacts along these lines at the disposal of the companies.

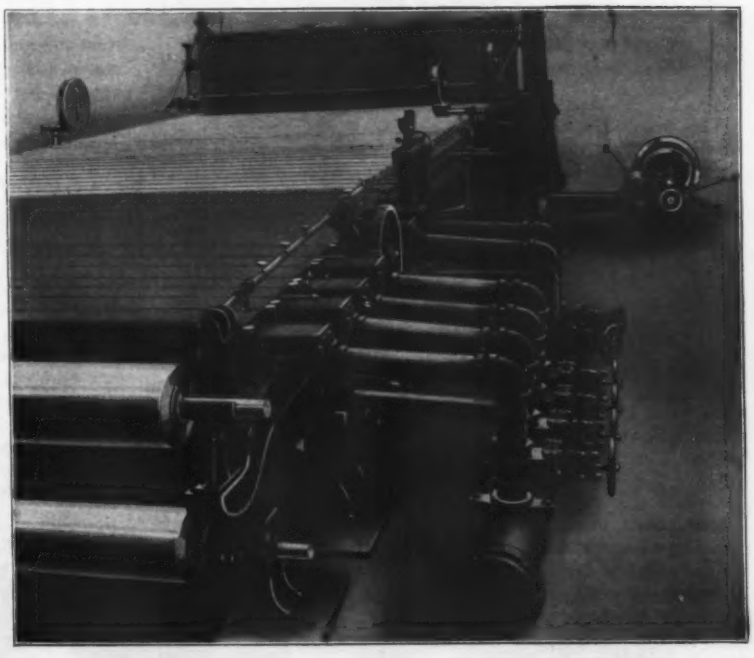
SAFEGUARDING

The Present and Future

It is said that industry cannot remain stationary; it must either move forward or backward. The advent of the NEW BELOIT FOURDRINIER marks an epoch in the science of paper-making, for it has advanced the methods of increasing production, saving labor and time to such a degree that many mills have more than paid for the added features in the first year of operation. The present has been safeguarded and the future even more so, for each year of operation thereafter means increased savings in production hours and man hours.

With it three patented features: REMOVABLE, ADJUSTABLE and SHAKEABLE, the NEW BELOIT FOURDRINIER has demonstrated that it can safeguard against losses consistently. In wire changes alone savings of 595 man hours, 51 production hours and 153 tons increase in production have been made; tests have shown 60.4 points on a 60-pound sulphite sheet; 26 to 44% more than the usual "point to the pound" has been demonstrated on Kraft; a better formed sheet at a higher speed is another accomplishment. Its benefits are many and can be better appreciated when you know all the facts.

Send for Bulletin No. 9 Now



The NEW BELOIT FOURDRINIER

Beloit Iron Works — **Beloit, Wis., U. S. A.**

Established — Since 1858

New York Trade Jottings

Vice President Fred A. Leahy of the Eastern Manufacturing Company, sailed on May 6 for a six weeks' business trip to England and the Continent.

* * *

G. A. Vedovi & Co. of 132 Nassau street, dealers in paper stock supplies, are sending to the trade a very interesting little booklet they have had published on Esparto Pulp.

* * *

At the convention of Cost Accountants and Engineers to be held in Milwaukee on May 20, the News Print Service Bureau will be represented by George D. Bearce, engineer, and Assistant Secretary Ware.

* * *

George D. Bearce, engineer of the News Print Service Bureau, left Monday for a trip to the Lake States where he will visit the various mills in that section. He will be away until the latter part of June.

* * *

Halsey, Stuart & Co., Inc., and the Minnesota Loan and Trust Company as managers of the syndicate announce that the $16,000,000 of Minnesota & Ontario Paper Company first mortgage 6 per cent gold bonds has been sold, applications being received largely in excess of the amount of the offering.

* * *

The Herrmann Paper Company is now located at 468 Broome street with a freight elevator entrance at 56 Greene street. The new telephone numbers are Canal 2438 and 2439. Removal from the old quarters at 23 Washington Place was forced by the acquisition of the entire building by New York University.

* * *

R. S. Kellogg's success in winning prizes in the recent contest conducted by "Life" prompted Col. W. E. Haskell of the International Paper Company to indite the following very apt tribute to Mr. Kellogg:

"Count that day lost whose low descending sun
Views not some check from some new contest won."

* * *

The round-table discussion on Monday at the weekly luncheon of the Salesmen's Association held at Hotel Belmont proved of unusual interest. It was reported that the market as far as certain lines were concerned had passed from a very dull one to a very active one. This was said to be especially true of kraft and specialties.

* * *

Frederick Groessler, general manager, and Mr. Zeitsch, Chief Engineer of Linke-Hofmann Werke A/G. Abteilung Füllnerwerk, Warmbrunn, Silesia, Germany, better known as the Fullner Company in this country, arrived in New York a few days ago to familiarize themselves with the developments in paper manufacture in America as well as those in pulp and paper machinery design. After visiting plants here in the East they plan to take a trip through Canada and also to the Pacific Coast.

* * *

Itsuki Nishi, manager of the Jugo Mill of the Oji Paper Manufacturing Company, Ltd., Tokio, Japan, has been in New York city for the past few days. He is on an eight months' trip of inspection of paper mills. He has been going over the mills here in the east and has now gone to Canada to visit the Canadian mills. From there he will go to Europe and then will come back to the United States in the Fall to look over the other mills here. The company he represents is one of the largest in Japan. It owns four mills and manufactures news, wrapping and practically all grades of paper.

Boston Trade News

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 12, 1925.—Spasmodic periods of activity in all branches of the paper trade in this section have been the only redeeming features of May thus far. The real news of the week, however, came Saturday morning with the break in prices in chip and news—a cut of $7.50 a ton being announced $2.50 a ton on chip and $5 a ton on news, making the general price now in New England of about $40 on both grades. The prevailing price has been up around $50.

The "price break" came suddenly and raised havoc for a while. Some of the "smaller fellows" have been hard hit. The others are managaing to weather it through. But the reaction was soon felt, in fact it came Monday when the price of chip climbed from the $40 price to $42.50 and filled news jumped back to $45.

Box board men—manufacturers of boxes—were temporarily upset by the sudden movement. The cut did not bring an influx of orders but it did bring more confusion to the trade, more uncertainty, and gave the manufacturer of boxes more trouble in figuring out his costs.

The mills still are running close—some on a three and four day basis. They are taking orders as they come, can give quick deliveries and are grateful for each order they get.

The Boston Carton Club, J. H. Perry, president, has announced plans for an outing to be held Monday, June 15, at the Vesper Country Club, Tyngsboro, Mass. All members of the New England Division of the National Paper Box Manufacturers Association have been invited.

Strike Was Short-Lived

[FROM OUR REGULAR CORRESPONDENT.]

BELLOWS FALLS, Vt., May 5, 1925.—The entire manufacturing force of the Moore and Thompson Manufacturing Company struck for two hours last Thursday over the appointment of W. E. Horn as superintendent of the mill. The company has been owned for two or three years by the Hudson Bag Company of New York City and they are building an additional factory here. The appointment was not pleasing to the employees who alleged that Mr. Horn's record was unfavorable to labor. Local officials, after communicating with the New York office, authorized the removal of Mr. Horn and the men returned to their work.

New Office of Grand Lake Co.

CHICAGO, Ill., May 11, 1925.—The Grand Lake Company, Inc. is now located at its new office at 111 W. Washington street. Conway Building, Room 1966, and its warehouse at 1500 S. Western avenue, the Midland Warehouse and Transfer Company.

The assumption of the lease on the present warehouse and office, 125 W. Kinzie street, by the Fort Dearborn Paper Company, together with the growth of the Grand Lake business, necessitated moving into more commodious quarters.

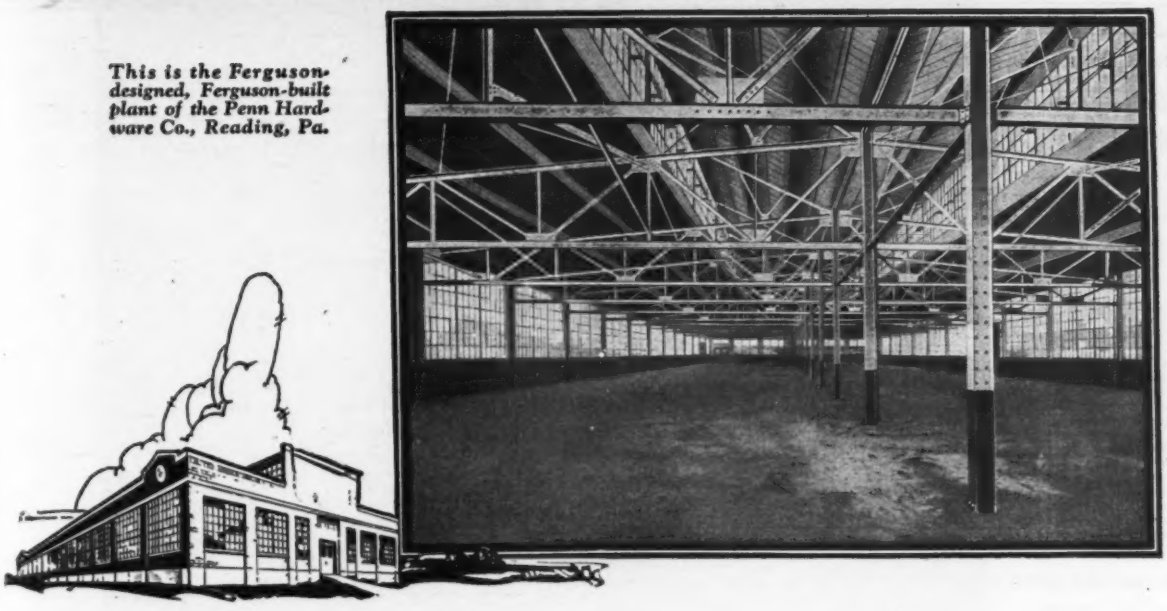
There will be no change in the telephone numbers, State 6936, 6937.

Chicago Market Shows Little Change

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 11, 1925.—Paper Trade conditions in the Chicago district have changed very little in the past week. Comment from the fine division are to the effect that the market is very well stabilized. In the coarse division there are one or two conditions that are more or less disturbing but of not sufficient importance to discuss in detail. Old papers are without change in price. Dealers say that their business is without any real life but they apparently feel relieved that the former week to week sag has stopped.

Big Business Builds The Ferguson Way



This is the Ferguson-designed, Ferguson-built plant of the Penn Hardware Co., Reading, Pa.

The highest type of factory building—in stock for immediate shipment

THIS building of concrete, brick and steel is being used in scores of ways by scores of different industries. It can be made a single factory or a unit of a plant conforming to any type of factory architecture.

It forms part of the plants of the National Cash Register Company, Procter & Gamble Company, the General Electric Company, Showers Brothers Company, Penn Hardware Company, Nordyke-Marmon Company, Robbins & Myers and many other nationally known institutions.

No wonder it is so popular. It has over 2,000 square feet of unobstructed floor space to every interior column. It has more than the usual amount of daylight. It is thoroughly ventilated. Increased head-room makes it from five to ten degrees cooler in summer. Design is strong enough to meet any code or load.

And what's exceedingly important to you—you can have it built by Ferguson and backed by Ferguson's written, binding guarantee in thirty working days.

If you need a factory building—need it quickly and at a moderate cost—write, phone or wire the H. K. Ferguson Company.

The Ferguson organization—operating nationally—has devoted twenty years exclusively to building industrial structures. It has developed nine types of buildings—each of which it can erect in a remarkably short time and at a surprisingly low cost through standardized methods and materials. Or it can design and build a special plant, ideally adapted to your requirements. And—at a definite saving to you in time and money.

Wire, write or phone The H. K. Ferguson Company

THE H. K. FERGUSON COMPANY

Cleveland Office: 4900 Euclid Bldg.; *Phone:* Randolph 6854
New York Office: 25 W. 43rd St.; *Phone:* Vanderbilt 4526
Tokio Office: Imperial Hotel, Tokio, Japan

Ferguson
GUARANTEED BUILDINGS

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

For the Month Ending March 31, 1925, and for the Nine Months Ended March 31, 1925, as Compared with Corresponding Months of Previous Year

IMPORTS—PAPER.

Paper and Manufactures of	March 1924 Quantity	March 1924 Value	March 1925 Quantity	March 1925 Value	Nine Months Ending March 31 1924 Quantity	Nine Months Ending March 31 1924 Value	Nine Months Ending March 31 1925 Quantity	Nine Months Ending March 31 1925 Value
Paper, except printed matter (total)	.....	$10,210,766	.....	$10,587.347	.....	$88,154,011	.....	$87,932,085
Printing paper—								
Standard news print.....lbs..free	243,808,618	8,949,309	255,836,683	9,188,416	2,000,782,545	75,320,397	2,067,999,154	75,550,600
Imported from—								
Finland	8,274,824	205,156	3,378,328	103,280	54,401,039	1,765,763	47,540,227	1,512,124
Germany	10,890,035	317,399	4,804,630	143,046	85,910,942	2,772,667	39,451,182	1,182,745
Netherlands	.....	.....	175,399	6,535	235,593	7,642	1,193,359	39,638
Norway	2,718,821	89,475	3,226,113	110,045	36,370,769	1,257,051	33,011,605	1,044,124
Sweden	9,320,714	288,766	9,982,646	286,877	90,412,156	2,927,186	115,652,457	3,591,531
Canada	212,373,958	8,041,287	234,024,358	8,530,515	1,727,810,338	66,411,491	1,817,935,109	67,743,539
Other countries	230.266	7,226	245,209	8,118	5,641,708	178,597	13,215,215	436,899
All other, n. e. s.....lbs..dut.	2,189,528	88,861	2,307,239	105,679	14,560,363	672,241	19,242,490	855,157
Grease-proof and water-proof papers.lbs..dut.	148,031	14,379	207,412	27,151	2,248,248	210,642	970,041	118,323
Wrapping paper .....lbs..dut.	.....	.....	.....	.....	[1]44,709,325	[1]1,939,824	.....	.....
Kraft wrapping paper .....lbs..dut.	2,979,614	112,336	1,797,224	64,447	[2]9,838,770	[2]368,403	16,349,134	654,681
All other, wrapping paper.....lbs..dut.	1,677,502	66,799	369,725	15,576	[2]5,753,908	[2]218,195	10,508,834	427,660
Writing, drawing, bond, etc.....lbs..dut.	119,514	27,774	281,098	55,272	2,072,271	383,038	2,308,014	533,786
Surface coated .....lbs..dut.	253,349	43,711	139,943	45,482	1,112,539	242,576	1,519,880	377,369
Tissue paper .....lbs..dut.	132,166	65,220	406,394	128,688	1,610,076	658,560	2,160,035	834,990
Paper boards—								
Pulp boards in rolls.....lbs..dut.	7,741,447	208,524	7,622,029	193,117	58,006,206	1,648,766	51,806,165	1,399,914
Other paper boards, n. e. s.....lbs..dut.	1,664,845	48,196	2,897,090	77,534	18,547,355	534,855	23,755,273	559,335
Cigarette paper, cigarette books and covers .....lbs..dut.	877,348	188,869	657,735	173,800	7,630,665	1,890,410	7,128,542	2,018,224
Photographic paper .....lbs..dut.	245,079	50,032	413,238	84,096	2,030,503	420,948	2,264,511	477,016
Hanging paper .....lbs..dut.	562,275	48,735	415,474	46,544	11,071,125	504,810	8,431,330	435,323
Paper boxes .....lbs..dut.	133,136	71,154	226,435	135,716	[3]341,627	[3]206,412	1,719,679	1,124,657
Decalcomania, not printed.....lbs..free	23,742	5,090	30,704	7,989	278,415	69,282	409,260	97,714
All other .....dut.	.....	221,777	.....	237,840	.....	2,864,652	.....	2,467,336
Books and other printed matter (total)	.....	618,105	.....	1,002,682	.....	6,495,480	.....	8,325,633
Books and pamphlets in foreign languages .....lbs..free	114,236	68,481	185,491	141,672	1,398,765	771,658	1,762,694	1,188,122
Books, maps, music, etc., 20 years old .....lbs..free	28,951	35,447	32,149	225,082	251,035	971,162	283,072	1,770,475
Other books, etc. .....lbs..free	202,808	110,186	273,514	155,558	1,626,818	1,049,335	1,891,767	1,427,323
Books, pamphlets and music, n. e. s.lbs..dut.	326,446	218,696	335,499	261,309	2,673,604	1,846,132	2,555,357	1,905,120
Maps, charts, and other printed matter, n. e. s.....dut.	.....	69,283	.....	80,350	.....	599,180	.....	686,962
Lithographically printed matter, n. e. s.—								
Cigar bands, labels and flaps....lbs..dut.	15,267	14,736	12,014	12,957	180,936	162,596	70,636	95,267
Decalcomanias .....lbs..dut.	15,251	22,472	27,949	41,204	173,387	247,789	197,922	291,813
All other .....dut.	.....	78,804	.....	84,550	.....	847,628	.....	960,551

CRUDE PAPER STOCK.

Rags for paper stock.....lbs..free	50,804,844	1,041,384	63,798,340	1,914,710	305,520,367	5,715,400	461,604,197	12,233,911
Waste bagging, waste paper, etc..lbs..free	8,931,855	112,116	11,973,006	229,912	73,565,807	900,013	92,258,536	1,301,402
Old rope and all other paper stock.lbs..free	7,538,742	402,683	6,579,918	388,060	69,465,659	3,482,402	63,107,794	3,409,596

WOOD PULP.

Mechanically ground wood pulp..tons..free	20,136	616,036	16,871	496,149	195,742	6,785,864	191,677	6,079,710
Chemical wood pulp—								
Sulphite, unbleached .....tons..free	31,970	1,709,242	53,638	2,897,777	363,726	21,596,821	488,236	25,889,170
Sulphite, bleached .....tons..free	25,090	2,095,477	28,050	2,204,806	182,384	15,643,317	236,862	17,771,416
Total sulphite .....tons	57,060	3,804,719	81,688	5,102,583	546,110	37,240,138	725,098	43,660,586
Imported from—								
Finland	3,756	190,648	6,239	355,780	39,774	2,430,245	42,945	2,237,211
Germany	1,034	69,906	7,341	457,436	40,008	2,807,870	66,576	3,903,182
Norway	11,569	955,842	7,538	557,644	49,702	4,076,170	56,755	3,974,112
Sweden	8,482	482,262	21,441	1,249,534	179,424	11,506,297	270,980	15,100,025
Canada	30,778	2,014,646	35,454	2,252,855	222,709	15,758,062	261,072	16,890,805
Other countries	1,441	91,415	3,675	229,334	14,493	661,494	26,770	1,555,251
Sulphate pulp, unbleached (kraft pulp) .....tons..free	20,222	1,131,018	24,106	1,436,445	195,117	12,363,967	236,028	13,314,142
Imported from—								
Finland	633	35,863	1,446	73,767	6,372	383,661	11,472	561,150
Norway	3,207	118,970	915	57,850	9,666	532,900	10,169	555,924
Sweden	3,169	166,632	9,261	517,889	77,731	4,693,291	119,284	6,254,672
Canada	13,213	809,553	11,763	746,275	99,592	6,634,223	91,024	5,725,218
Other countries	.....	.....	721	40,664	1,756	119,892	4,079	217,178
Sulphate pulp, bleached .....tons..free	.....	.....	1,522	98,435	5,771	396,931	31,246	1,751,384
Other pulp .....tons..free	619	33,147	449	34,558	6,324	382,347	1,620	111,596

CHEMICALS AND OTHER PAPER MAKERS' MATERIALS.

Colors, dyes, stains, color acids, and color basis, n. e. s.....lbs..dut.	382,921	450,449	671,852	907,136	2,437,904	3,257,398	3,558,968	4,836,778
Imported from—								
France	25,559	34,740	14,268	21,469	163,072	260,667	86,857	129,477
Germany	216,449	243,807	319,538	435,571	1,221,398	1,490,401	1,814,499	2,559,958
Italy	24,782	30,174	27,512	37,337	159,352	217,853	139,979	193,432
Switzerland	59,587	76,860	263,787	354,540	671,553	1,017,087	1,150,599	1,538,621

[1] July 1 to Dec. 31, 1923. [2] Beginning Jan. 1, 1924. [3] Beginning Jan. 1, 1925.

(*Continued on page* 46)

The illustration shows an A-S-H Standardized Coal Bunker of 200 tons capacity at the Columbian Paper Co., Buena Vista, Va. Note the true "catenary curve" of the bunker.

The "What" and "Why" of this "No-Rust-Out" Coal Bunker

The A-S-H Standardized Cast Iron Coal Bunker consists of a series of steel bands, suspended from both ends. The walls of the bunker are then formed by clamping special overlapping castings to these steel supporting bands. As each horizontal row of plates is free to move in relation to one another, it is evident that the steel will always be in tension and therefore the section is a true catenary section and highly efficient.

(1) The load in the bunker is carried by steel bands, not by the cast iron plates which resist the corrosion.

(2) As castings only are exposed to the moist coal, the bunker will not fail from corrosion.

(3) This bunker will give 85% to 95% efficiency.

(4) Costs less per cubic foot of storage space per year of life.

(5) Requires no concrete, brick or other lining, therefore this cost is saved together with cost of heavier foundations and superstructure.

(6) Is extremely simple to erect, due to standardization,—ordinary labor can do the work.

(7) Is easily dismantled and re-erected if desired.

(8) Will not buckle or fail in case of fire caused by spontaneous combustion.

Due to standardization of parts, the cost of this bunker is extremely moderate and because of the cast iron walls, its maintenance is practically nil.

Write for bulletin.

The ALLEN-SHERMAN-HOFF Co.

263 SOUTH 15th. STREET - PHILADELPHIA

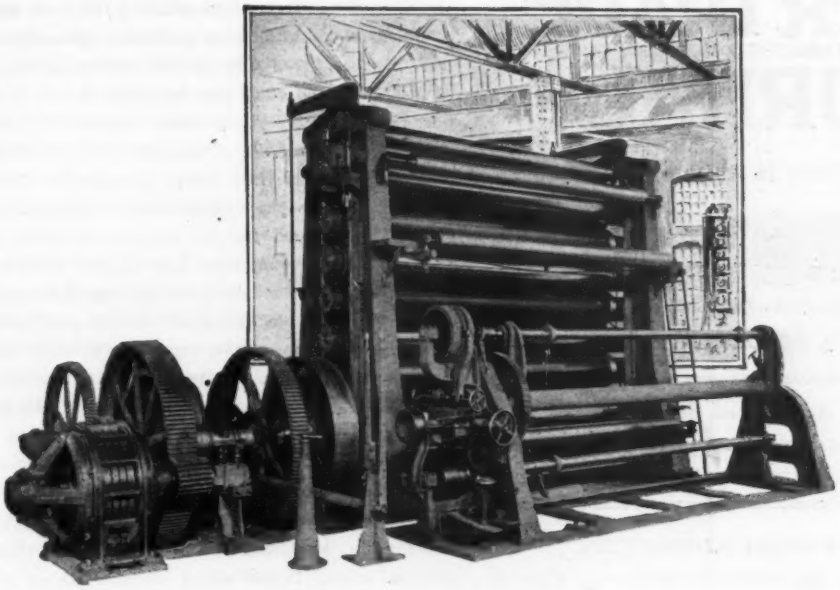
Chicago, New York, Boston, Rochester, Detroit, Kansas City, Mo., Pittsburgh, St. Louis, Wilkes-Barre, Pa., Atlanta, Indianapolis, Cincinnati, Minneapolis

PAPER AND PAPER STOCKS IMPORTS AND EXPORTS OF THE UNITED STATES

(*Continued from page 44*)

Paper and Manufactures of	March 1924 Quantity	March 1924 Value	March 1925 Quantity	March 1925 Value	Nine Months Ending March 31 1924 Quantity	Nine Months Ending March 31 1924 Value	Nine Months Ending March 31 1925 Quantity	Nine Months Ending March 31 1925 Value
United Kingdom	7,275	$6,794	22,668	$18,044	62,741	$69,330	120,442	$110,429
Other countries	49,269	58,074	24,079	40,175	159,788	202,060	246,592	304,861
Casein or lactarine....lbs..dut.	1,984,619	170,366	1,558,777	119,528	11,770,335	1,529,469	12,516,321	905,259
Kaolin, china, and paper clay....tons..dut.	13,549	136,472	46,494	358,442	194,049	2,039,162	247,638	2,358,310
EXPORTS—PAPER								
Paper, except printed matter (total)	.....	$1,927,839	.....	$2,046,911	.....	$17,980,129	.....	$17,259,643
Printing paper—								
Newsprint paper ....lbs.	2,628,616	126,590	2,014,183	93,268	23,803,017	1,198,617	24,617,133	1,219,205
Exported to—								
Canada ....lbs.	104,309	9,936	46,761	4,310	897,081	74,142	569,642	43,778
Central America ....lbs.	59,792	4,187	93,818	4,057	785,466	39,392	565,815	30,412
Mexico ....lbs.	126,250	6,308	327,802	17,141	1,151,062	62,270	1,611,179	83,939
Cuba ....lbs.	1,666,141	73,376	1,062,053	42,446	13,953,661	637,018	11,267,338	482,703
South America ....lbs.	94,482	4,697	177,468	8,732	1,350,306	72,710	4,321,543	214,833
Japan ....lbs.	93,037	5,320	76,330	4,845	1,129,917	72,222	341,011	24,753
Philippine Islands ....lbs.	425,528	19,124	89,353	4,124	3,157,103	151,968	3,023,013	140,063
Other countries ....lbs.	59,077	3,642	140,598	7,613	1,378,421	88,895	2,917,592	198,724
Book paper, not coated ....lbs.	1,527,057	178,481	1,620,684	179,765	16,405,722	1,880,676	14,842,619	1,608,715
Exported to—								
United Kingdom ....lbs.	68,752	12,382	24,335	3,498	557,040	105,325	304,264	64,006
Canada ....lbs.	206,358	27,425	248,569	30,659	1,522,230	196,562	1,238,349	154,547
Central America ....lbs.	74,961	7,872	51,988	6,097	601,180	72,144	454,910	50,033
Mexico ....lbs.	101,561	11,372	156,819	19,619	1,065,195	128,684	1,884,031	211,377
Cuba ....lbs.	466,655	53,796	597,525	60,519	3,593,453	397,943	3,298,657	339,343
Argentina ....lbs.	51,899	4,199	67,045	5,601	563,223	75,487	461,836	49,315
Brazil ....lbs.	50,884	7,184	16,508	1,856	449,222	53,253	261,188	32,546
Venezuela ....lbs.	143,141	15,437	72,359	6,116	477,862	51,434	351,578	37,932
Other South America ....lbs.	45,439	5,329	136,054	12,922	848,557	105,384	1,030,347	111,683
China ....lbs.	94,751	7,460	43,299	6,612	2,215,988	212,346	3,371,720	309,073
Japan ....lbs.	64,209	7,431	26,129	3,470	1,258,481	123,693	205,854	22,604
Philippine Islands ....lbs.	83,344	7,357	120,606	10,940	1,662,050	154,854	966,572	92,582
Australia ....lbs.	6,753	1,382	500	58	647,839	85,320	341,497	38,054
Other countries ....lbs.	68,350	9,855	58,948	11,798	943,410	118,247	671,816	95,620
Cover paper ....lbs.	59,425	12,954	126,613	24,812	765,909	139,089	778,433	150,953
Grease proof and waterproof paper....lbs.	186,777	21,250	147,452	19,317	1,357,792	171,671	1,090,582	130,147
Wrapping paper—								
Kraft paper ....lbs.	38,367	3,593	54,686	4,974	674,164	67,911	419,896	44,596
Other wrapping ....lbs.	2,122,077	181,341	2,314,141	184,406	17,862,924	1,501,642	18,974,649	1,469,498
Surface-coated paper ....lbs.	349,570	54,637	186,033	30,155	2,719,697	425,236	2,340,731	336,064
Tissue and crêpe paper ....lbs.	279,264	58,603	261,210	65,238	2,555,792	651,321	2,463,310	668,009
Toilet paper ....lbs.	326,635	37,438	532,914	65,371	3,026,474	344,003	3,354,197	409,159
Paper towels and napkins ....lbs.	79,180	17,336	95,457	17,014	896,200	159,553	940,398	156,431
Box board ....lbs.	.....	.....	770,116	31,349	.....	.....	[2]2,267,024	[2]88,569
Bristols and bristol board ....lbs.	31,531	4,221	81,934	11,035	1,017,510	92,903	608,074	76,964
Other paper board and strawboard....lbs.	6,596,012	262,424	3,069,449	138,006	48,578,295	2,133,395	41,348,030	1,599,185
Sheathing and building paper ....lbs.	553,473	22,976	982,707	43,540	3,307,473	152,705	7,889,239	377,067
Wall board of paper or pulp ....Sq. ft.	1,574,494	47,107	964,937	30,170	15,305,361	530,532	10,897,599	380,874
Blotting paper ....lbs.	293,394	34,273	209,993	23,584	[1]746,508	[1]89,586	1,928,107	227,394
Filing folders, index cards, and other office forms ....lbs.	49,025	14,904	52,505	17,331	[1]111,885	[1]41,834	369,928	120,542
Papeteries (fancy writing paper)....lbs.	21,044	9,123	35,477	12,875	285,003	117,659	368,261	125,808
Other writing paper ....lbs.	242,746	43,175	255,125	50,091	4,206,762	725,356	2,501,184	422,920
Cigarette paper and books....lbs.	68,706	22,844	113,071	25,521	661,139	212,174	450,508	140,721
Photographic paper ....lbs.	104,655	119,605	128,453	122,972	1,068,356	995,746	1,165,021	1,047,192
Paper hangings (wall paper) ....yards	2,834,971	72,348	2,654,739	90,746	19,952,811	490,367	19,116,968	482,433
Paper bags ....lbs.	779,641	72,922	1,372,205	121,207	6,016,745	660,349	8,534,117	735,850
Boxes and cartons ....lbs.	1,330,582	104,675	1,352,164	104,644	8,532,698	817,868	9,972,526	876,092
Carbon paper ....lbs.	73,158	58,271	82,896	71,424	649,026	503,584	651,830	532,057
Envelopes ....lbs.	150,542	30,000	220,978	43,365	1,963,451	400,910	1,876,011	357,630
Cash register and adding machine paper..lbs.	106,628	13,569	161,768	20,614	968,842	111,547	1,024,466	110,432
Other paper and paper products....lbs.	2,132,938	303,779	2,253,456	404,117	20,897,411	3,363,895	30,477,008	3,365,136
Books, maps, pictures, and other printed matter (total)	.....	1,548,967	.....	2,305,861	.....	14,708,789	.....	15,441,835
Books and pamphlets ....lbs.	2,745,474	793,360	4,526,813	1,257,949	22,422,844	7,241,052	28,224,733	7,706,612
Maps and charts ....lbs.	19,899	18,806	12,346	15,669	123,935	124,028	147,626	143,474
Music in books or sheets ....lbs.	59,642	34,317	39,148	25,209	483,663	279,323	466,902	283,908
Souvenir post cards ....lbs.	18,769	12,229	29,916	11,985	431,961	177,647	292,774	157,887
Lithographically printed matter, except post cards and maps ....lbs.	163,585	101,244	276,719	194,539	1,548,350	1,119,505	1,984,994	1,394,957
Playing cards ....packs	623,598	63,506	401,352	51,584	5,612,363	613,199	5,075,839	544,616
Other printed matter ....lbs.	1,343,135	525,505	1,934,364	748,926	14,479,273	5,154,035	14,469,594	5,210,381
WOOD PULP AND PAPER STOCK.								
Sulphite wood pulp ....tons	1,218	67,796	2,058	115,064	11,274	645,605	17,122	1,012,614
Soda wood pulp ....tons	310	33,054	357	33,927	1,318	128,691	1,560	148,804
Other wood pulp ....tons	169	10,925	1,702	101,068	2,541	139,778	7,558	784,576
Rags, and other paper stock....lbs.	9,601,831	169,143	16,209,137	317,920	93,715,161	1,554,633	99,242,652	1,667,836
PAPER AND PULP MILL MACHINERY.								
Paper and pulp mill machinery....lbs.	636,040	129,675	234,009	109,857	7,521,391	1,480,409	5,635,132	1,241,577

[1] Jan. 1 to March 31. [2] July 1 to Dec. 31.



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They are also extremely economical—a little goes a long way. Even after long periods of service, their lubricating value remains unimpaired, and exposure to air will not cause oxidation.

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GRENOL STEAM CYLINDER OILS
DYNOL ENGINE AND TURBINE OILS
TYCOL LUBRICATING GREASES
CLAROL MACHINERY OILS

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PAPER TRADE JOURNAL
ESTABLISHED 1872

With Which Is Combined

PAPER
The Magazine of the Paper Industry

HENRY J. BERGER, Editor

Member A. B. C. Audit Bureau of Circulations

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AN AID TO UNIFORM PRODUCTION

The lack of interest in foreign markets on the part of American paper manufacturers, according to O. M. Butler, acting chief of the Paper Divisions of the Department of Commerce is not easy to understand when considered on a stirctly commercial basis.

The reason usually advanced that the American product can not compete with the low prices quoted by foreign manufacturers is not a wholly accurate statement of fact. Official declarations covering definite merchandise show that $2,000,000 worth of American paper is sold abroad each month by American manufacturers and their agents.

Unfortunately, the opinion of many manufacturers concerning foreign markets was formed during the depression of 1921 that immediately followed the inflated prices and abnormal demands of 1920. In addition to the necessity of reducing production costs and domestic prices to a point that seemed ruinous compared with those prevailing in 1920, American manufacturers began to be underquoted abroad by the European mills that were then re-entering the market after a period of inactivity caused by the war.

The paper industry throughout the world was affected by a variety of exceptional circumstances in 1921. The wage scales demanded by labor, as well as prices asked for raw materials and other items entering into the cost of the finished sheet, were more guesswork resulting from lack of information than definite values based on well balanced commercial considerations. In a very few countries production costs were excessively high; in most others they were far lower than actual conditions warranted.

The United States was the outstanding example of the former. Paper production costs during the war had kept pace with advancing prices in general and the resulting high prices demanded for American paper were still further increased in foreign markets by the high exchange value of the American dollar. Notwithstanding this, little other paper was obtainable and record shipments at peak prices continued until about the end of 1920.

The continued activities of American industry during the war had enabled it to adjust itself as the occasion arose to changing conditions and prices, but when production was resumed in Europe after several years of idleness it was not likely that all interests concerned would understand immediately just how much the changed conditions would affect their particular commodity or exactly what those changes were. The natural tendency of labor and suppliers of pulp wood and other raw materials, as well as the mill owners themselves, was to consider values in the light of pre-war prices.

The advantage of low production costs that followed as a result of low-priced labor, raw materials, and other items was in most instances still further exaggerated by exchange rates when the product was offered for sale in other countries. This extreme situation was only temporary, however, and could not continue, for it was the result of a false understanding of true value and a failure to realize the practical effects of new price levels.

An examination of market reports published in the various trade journals abroad and of the special reports that have been received, clearly indicate that the outstanding characteristic of the paper industry of Central Europe and Scandinavia during the past three years has been one of adjustment to new conditions. This adjustment had not been without fluctuations which were to be expected as a result of temporary circumstances, but the general trend has been steadily upward and indications are that it will continue to rise until true values are reached.

The paper industry of Germany may be regarded as an example of the adjustment that has been and still is taking place abroad. During 1921, with little demand at home, a depreciated exchange, low production costs, and the need of ready money, German offers in foreign markets were often in the nature of forced sales and quotations were in many instances considerably under production costs in the United States. There was, however, no regularity in the prices quoted which varied with the immediate situation and necessities of each mill, and all branches of the industry in Germany complained that operations were carried on at a loss.

The last months of 1921 and the year 1922 saw substantial increases in all the more important items that enter into the cost of production. A coal shortage was accompanied by a lack of pulp wood which it became necessary to import from Czechoslovakia and Finland at constantly increasing prices. At the same time workmen demanded higher wages and somewhat later general freight rates were increased 100 per cent to meet the railway deficit.

These advances continued during 1923 and by June of that year news print prices were more than 50 per cent greater than those quoted at the end of 1922. As production costs approached world levels, advances became more gradual but continued. On August 1, 1923, No. 1A unbleached sulphite was quoted in Germany at $2.82 a hundred pounds. This price with some fluctuations had advanced to $3.00 by December, 1924, and to $3.05 by February, 1925.

During the earlier years of this period the depreciation of the mark and unsatisfactory industrial conditions generally throughout Germany limited domestic demand and forced the making of unprofitable sales abroad. A substantial improvement in domestic demand occurred, however, during 1924 and despite an increase in production of approximately 16 per cent compared with 1923, exports decreased by slightly less than 50,000 tons. As Germany is not yet consuming its pre-war quota and reports continue to be received that high wages, freight rates, and prices of raw materials are forcing production costs to a point where it is increasingly

difficult to compete abroad, there is reason to believe that still greater proportions of the German output will be absorbed locally.

An export trade in addition to the direct profits to be derived from such a source provides an outlet that tends to balance production during periods of depression in the domestic market. Most paper manufacturers have realized this but questioned the possibility of competing abroad. The changes that have occurred, however, and indications of still further changes in the competitive situation of foreign producing countries, are of such importance that a proper attention to opportunities for greater development of their interests demands that American paper manufacturers give careful consideration to the possibilities in foreign markets under conditions as they are at present, and that they keep informed concerning other changes that seem likely to occur in the future. In this way the greater part of American manufacturers of paper and paper products should be able to develop an additional market for their products that is both profitable in itself and serves as an aid to uniform production.

POSSIBILITIES OF TRADE ASSOCIATIONS

As yet unrealized possibilities lie in the future development of trade associations is the conclusion of the National Industrial Conference Board in its study of the economic significance and legal status of trade organizations.

The full extent to which trade associations may serve as both a stimulating and regulating factor in business has not yet been perceived, in the opinion of the conference board. It is through the medium of the trade association movement, the board believes, that a properly balanced public policy, avoiding the extremes of "unfettered, unregulated competition" and "authoritative control of industry under bureaucratic forms," may be evolved.

Pressure of group opinion is characterized as a more effective and flexible regulative force than rigid coercive legal measures in the report. It is through the co-operative, self-imposed business standards and practices promulgated through the trade associations, always, however, safeguarding the essentials of competition, the board believes, that the ideal but elusive mixture of freedom and regulative authority in the realm of business may be achieved.

Fidalgo Pulp Plant Nearing Completion

[FROM OUR REGULAR CORRESPONDENT.]

ANACORTES, Wash., May 7, 1925.—Electrical equipment, including transformer and twenty motors, arrived this week and are being installed in the plant of the Fidalgo Pulp Manufacturing Company, which is rapidly nearing completion. The huge digester that will cook twenty-five tons of pulp each day, has been installed and was tried out this week. The main building is completed and work is being rapidly pushed on the machine, sulphur storage and wood building. The mill will be electrically equipped throughout for the making of sulphite pulp exclusively.

Boston Paper Trade to Meet June 9

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., May 11, 1925.—The Annual Summer Meeting and Outing of the Boston Paper Trade Association will be held at the Vesper Country Club, Lowell, Mass., on Wednesday, June 9. An elaborate program of sporting events is being arranged, formal announcement of which will be made later.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 13, 1925.—The Government Printing Office has received the following bids for 14,500 pounds of 21 x 32—No. 8, 14½, onion skin paper: Barton, Duer & Koch Paper Company, 22.78 cents per pound; Whitaker Paper Company, 23.13 cents; R. P. Andrews Paper Company, 22.73 cents; American Writing Paper Company, 28 cents; Dobler & Mudge, 23 cents; Old Dominion Paper Company, 23.19 cents; Reese & Reese, 34.14 cents.

The Printing Office has also received the following bids for 6,250 pounds of 21 x 32—12½, No. 7, white manifold bond paper. Barton, Duer & Koch Paper Company, 41.15 cents; Whitaker Paper Company, 41.83 cents; R. P. Andrews Paper Company, 41.1 cents; American Writing Paper Company, 47 cents; Dobler & Mudge, 41 cents; Old Dominion Paper Company, 41.98 cents; and Esleeck Manufacturing Company, 41 cents.

The Government Printing Office will receive bids on May 18 for 33,840 pounds, 180 reams, of various sizes lithograph finish first class chart paper.

The Government Printing Office will receive bids on May 15 for 14,500 pounds (500 reams) of 21 x 32—29, white bond paper.

The Maurice O'Meara Company has been awarded the contract for furnishing the Hampton Roads Navy Yard with 1,150 reams of 8 x 11, white proposal paper at $437.00, bids for which were received on April 21.

Parchment Ruling to Stand

[FROM OUR REGULAR CORRESPONDENT]

WAHINGTON, D. C., May 13, 1925.—The Customs Service will probably not change its ruling in connection with the importation of imitation parchment paper in view of an office order which has just been promulgated at the Customs Service.

This order states in effect that if a ruling has been made by the Customs Service which is subsequently found to be inaccurate that this ruling cannot be changed if an appeal has been made to the Court in the meantime. It is understood here that a number of appeals have been made in connection with the importation parchment paper and therefore it is not expected that the Customs Service will take any action in this connection.

Contract for Ruths Steam Accumulator

Vickers and Combustion Engineering, Limited, has been awarded the contract for a Ruths Steam Accumulator installation to be erected at St. Lawrence Paper Mills, Ltd., Three Rivers, P. Q., in connection with Lopulco equipment for the boiler furnace.

The Accumulator will be constructed for 150 lbs. working pressure, 4050 cubic feet volume, with a length of 48 feet and a diameter of 12 feet, the capacity being 24,000 lbs. of steam.

This is the second Ruths Accumulator to be installed by the above company, the first being for Price Bros. & Co., at their new pulp and paper mill at River Bend. In Europe, 75 pulp and paper mills have been equipped with Ruths Steam Accumulators.

Memorial Park to Late W. Murray Crane

[FROM OUR REGULAR CORRESPONDENT]

DALTON, Mass., May 11, 1925.—Land has been staked out on Main street west of the Crane Memorial Community house for a memorial park to the late Senator W. Murray Crane, head of the Crane papermaking interests. In this park there is to be placed a white marble memorial that is being designed by R. H. Danage of New York City. Olmstead Brothers will have charge of the landscape features. The committee in charge of the selection of the memorial consists of Philip Weston, chairman, A. W. Eaton of Pittsfield and L. A. Howarth of Dalton. It is hoped to dedicate the memorial in October.

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Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G.MacNAUGHTON, Secretary

The Manufacture of Paperboard—VII

By A. O. Bragg

(*Continued from* Paper Trade Journal, *April* 9, 1925).

Moisture Content

The proper moisture content of the various cylinder machine boards, has been standardized in only a few instances. The amount in general varies from around 5 or 6 to 9 per cent at a relative humidity of 35 per cent. For straw, news or chip for corrugating purposes, 10 per cent moisture is left in, to facilitate quick absorption of the sodium silicate used as adhesive in corrugated boards. To go to the other extreme, saturating felt, to be saturated with asphalt for roofing, must be run as nearly bone dry as possible, to expedite saturation with the melted asphalt, which can only take place in the sheet in the absence of moisture or steam.

The usual run of water-finished boards should contain from 6 to 8 per cent of moisture. On account of their greater stiffness, set-up box grades may permissibly be run somewhat drier, but this is not usually done or advisable. Less than 5 per cent moisture indicates that the sheet has been more or less "burned up on the irons"—dried out too much—, which decreases the strength and bending qualities and makes the sheet brittle. More than 8 per cent, unless in special cases, is simply water included on the basis of fiber, this amount being ample to give good water-finishing and to retain the flexibility of the fibers and consequently the strength and bending qualities of the sheet. The thinner the sheet, the higher the moisture content is liable to run especially in No. 3 and 4 finishes.

The Williams Apparatus Company, of Watertown, N. Y., specializes in equipment for moisture testing of pulp, paper, board, etc. In making moisture tests of board just off the machine, the time element is very important, as the results should be obtained as quickly as possible to enable the machine tender to make the necessary adjustments before a large amount of product has been made of too high or too low moisture content. Moreover, unless the press rolls are very accurately adjusted and weighted, the percentage of moisture is not usually uniform across the sheet, and therefore, for the most informative and accurate results, the moisture testing equipment should be capable of quickly drying a narrow strip cut clear across the sheet.

Rigidity

Rigidity, or stiffness, is of great importance in many kinds of board, such as in all set-up box grades, building boards, shipping container boards (single ply, laminated and corrugated), and in some specialties such as board to be used for calendar backs, paper fans, display boards, etc. Except in special cases, very little attention is paid at present, to this quality, in so far as testing and accurate control is concerned. There is no question that more extended use of stiffness testers would be profitable to the mills in preventing the use of excess stock, size and alum to give extra density and stiffness over and above that required by the customer, and to the buyer or user, in the inspection of his purchases of board in which this quality is important. Naturally, in a product otherwise the same, the rigidity will vary as the thickness.

At times, a certain minimum of stiffness is important in a thin, folding boxboard as in other board products. For example, cartons are now quite generally filled by automatic filling machines. Such cartons are shipped tied "in the flat," in bundles. If the board is not stiff enough—too flimsy—these flat, folded cartons, will not open up properly or at the most efficient speed due to the construction of the filling machines. Much trouble and expense maybe incurred on this account by the user of the cartons, who in turn charges up the board mill or carton manufacturer for it.

A simple and practical stiffness tester, designed and used by the writer, was described and illustrated in the installment of this treatise published in "Paper" Nov. 20, 1924. To the writer's knowledge, no such apparatus is on the market in America but may be easily constructed.

Translucency or Opacity

Translucency, or opacity, is of more importance when considered in connection with the individual plies of the outside liner, than with the whole board, which is practically always opaque. However, the degree of opacity, or translucency, of the liners of Patent Coated Boards, for instance, has a direct bearing on the brightness of the white or the color, and the appearance of the finished cartons. If the top or bottom liner is too thin, or is too transparent due to poor formation, the color of the news stock beneath will cause more or less greyness to the liner and detract from its appearance. To obviate this effect, one ply, called an "underliner," of some brighter colored stock such as bleached manila or plain manila furnish, is sometimes formed between the patent coated outside liner and the news center. By greater reflection of light from the underliner the bright appearance of the outside liners is retained.

Another way of securing good, closed formation and opacity in such board is to make the outside liners by using two

Technical Section, Page 181

cylinders instead of one, the "wild" places of one ply being corrected by the dense portions of the other.

In the examination for opacity of laminations, liners or the plies of board, the desired portion can be removed from the rest of the sheet by soaking it in hot water for a time depending on the degree of sizing, and then carefully peeling off the balance of the sheet. This thin sample can then be compared with a ply of the same board of standard opacity, by holding them up to a light and noting the comparative light penetration.

Measurement of Opacity

A numerical expression of comparative translucency, or its opposite—opacity,—can be easily obtained in the following manner: A ventilated tin-lined box, divided by a central, vertical, light-tight partition, is provided with a light of the same candle power in each compartment, the top of the compartments being a plate of glass painted black except for a small area directly above each lamp. A finely graduated, variable resistance is placed in series with one lamp, the other being directly across the 110 volt line.

The sample to be examined is placed over the clear part above the lamp without the resistance, and the standard opacity sample with which it is to be compared, over the other lamp. The number of arbitrary spaces or units through which it is found necessary to adjust the resistance to make the intensity of the light through the standard sample, the same as that through the sample to be compared, is then a measure of their comparative opacities.

This test will be considered in more detail later.

For more exact, and absolute, opacity and translucency determinations the "contrast ratio" method, described in Bureau of Standards Circular No. 63, may be used. This method is also described and illustrated in "Paper Testing Methods" prepared by the Committee on Paper Testing, of the Technical Association of the Pulp and Paper Industry.

Curling of Board

A great deal of board, especially fiber board, set-up boxboard and folding boxboard, is ordered in flat sheets. Due to irregularities in drying, or pressing, or to careless operation of the water boxes on the calendars when making water-finished board, curling of the finished board becomes at times, very pronounced. This is chiefly in the machine direction or "with the grain." Board shipped in rolls tends to curl more, after cutting into sheets, than that cut into sheets at the mill or at the machine.

The flatness of a sheet, of course, can be easily checked by the eye alone or by the application of a straight edge.

Water Resistance

The resistance of a board to water penetration, when it is highly sized or waterproofed, is commonly checked at the mill by hanging up trays or cones made from it, filling with water and noting the time required for the water to penetrate. If penetration does not occur until after 3, 6, 24 hours some other arbitrary period, the board is deemed sufficiently waterproof.

This method is open to serious objections from the standpoint of accuracy, the chief of which is that, due to the variations in the number and depth of the cracks or creases developed in making up the trial container, penetration often occurs through them and board is rejected which, if tested more accurately, would probably be found satisfactory.

The crudities in this method have been recognized and eliminated in the method used by the Bureau of Chemistry, Department of Agriculture, and referred to in the previous installment of this series under "Degree of Sizing." A reference[1] to the original description and apparatus of the method, is given there.

Much closer definition has been given to the present rather elastic term "waterproof" by the recommendations issued by the Freight Container Bureau of the American Railway Association, 30 Vesey Street, New York. Circular No. 6 of this Bureau, "Solid Fiber and Plyboard Boxes for Boots and Shoes" specifies:

"Both surfaces of any board used in the manufacture of boxes (for this purpose) must be waterproofed to the extent that when the board is clamped as a solid gasket at the bottom of an open cup or cylinder filled with water to the height of 3 inches above the board, the under side of the board must remain dry after an exposure of 6 hours."

This test is in accordance with the method of the Bureau of Chemisty referred to. Six hours' exposure of board in this apparatus is also considered a sufficient maximum time to be found waterproof or not, by the Bureau of Chemistry Laboratory.

This Laboratory has found that asphalt is the most efficient water resisting medium so far tested, paraffine not having been found to be particularly water resistant. In fact, it is its opinion, that a well rosin-sized paper would be quite as water resistant as paper sized with paraffine or paraffine-rosin emulsions. A comparatively thin paper, well coated with asphalt, will not allow water through even after 48 hours or longer.

Degree of Finish

Finish or Gloss can be tested by the Ingersoll Glarimeter, described and illustrated in "Paper Testing Methods."[2] Tests recently completed by the Bureau of Standards, so far as they have gone, show that the method is satisfactory, different observers being able to duplicate results on the same sheet and different machines to check each other. Owing to the close relation existing between finish and printing qualities, the Bureau of Standards will probably do some further work to find the relation, if any, existing between Ingersoll readings and printing quality.

Color Matching

Fastness of color and matching of color are at present done with practically no equipment in the usual board mill. Colors are checked as to a "commercial" match by the eye. The fastness of colors are usually determined by exposure of a portion of the sheet to sunlight, the rest being covered. Due to the great variation in the constituents of raw materials—soft white shavings and hard white shavings for instance—used to give color to patent coated boards, and in the raw material used those of other colors, it is extremely difficult, if not impossible to match colors exactly. Much might be done however, by more careful technical control and the use of a colorimeter found to be practical and accurate.

Color Fastness

Color fastness can now be quickly determined by the use of the ultra-violet light, which gives in a few hours the equivalent of days of exposure to sunlight. The usual mill or board user could probably not afford to purchase such an instrument[3] but several commercial paper testing companies now have these instruments and make color fastness tests. The fastness of colors is particularly important in board for cartons likely to be placed in show windows or other places exposed to sunlight. In some cases, it is almost impossible to color board to a desired shade that will at the same time be resistant enough to stand the sunlight without fading. In such cases, the board is sometimes printed with the desired solid color, the pigments in the ink being very fast to light.

Determination of the Grain

The "grain" or machine direction in board is easily determined by visual inspection of the "lie" of the fibers, and by the way the sheet tears, being straight in the machine direction and jagged and irregular across the machine.

While on the subject of machine and cross directions, the extreme importance of making tests for folding endurance and tensile

[1] *See* also Testing Paper for Water Resistance, by F. T. Carson, PAPER TRADE JOURNAL, Sept. 4, 1924.

[2] *See* also The Glarimeter and the Measurement of the Finish of Paper, by R. E. Lofton, PAPER TRADE JOURNAL, Feb. 12, 1925.

[3] Fade-O-Meter. Atlas Electric Devices Co., Chicago, Ill. *See* PAPER TRADE JOURNAL, Sept. 24, 1924.

strength both with and against the grain might be cited. In an address before the National Association of Corrugated and Fibre Box Manufacturers Association, H. Z. Schniewind of Foreign Paper Mills, Inc., New York said in describing the Schopper Folder:

"Two samples of combined corrugated boards were tested to show the combined folding endurance. The results were as follows:

Number of Double Folds

	Machine Direction	Cross Direction
Sample 1	35,670	3,540
Sample 2	6,322	3,460

Sample No. 1 showed over ten times the strength variation while yet it had a very high bursting strength test, whereas Sample No. 2 had a very low bursting strength test, yet a very good uniformity, even better than one half strength variation. It can be seen that the Schopper Folding Test showed that sample No. 2 was very uniform, and only less than 5 per cent weaker in the weak direction than Sample No. 1; whereas sample No. 1 had considerably more than double the bursting strength, and had 32,130 double folds greater strength in the machine direction over the cross direction, which is lost strength value as the container made from such combined board would give way in the weak direction thereby the great strength in the other direction would be lost."

The tensile strength of board is usually twice or more in the machine direction, that is across the machine.

"Bulk, or weight for bulk," and "Area per unit weight" ("Footage," "Yardage," or "Sheetage"), because of their great importance to makers and consumers of board, will be taken up at some length in the last part of this section, together with some thoughts on the advantages to be gained, both by mills and consumers, of giving more exact and detailed specifications in inquiries and orders.

Properties to Be Evaluated by Personal Judgment

Referring to the previous installment of this series, in PAPER TRADE JOURNAL, April 9, 1925, the items listed under "Most Common Defects of Paperboards" are for the most part self-explanatory; while for those under "Properties Valuated by Personal Judgment Only," while extremely important, and even decisive in some cases, at present there are no satisfactory testing methods by which they can be rated numerically or definitely. These must therefore be weighed by personal experience, knowledge of the particular requirements of the application of the board, and comparison with similar products which in the past have proven satisfactory.

Some of the items listed may appear to be quite obvious and insignificant; but they are, nevertheless, of common occurrence. Such, for example are "Not cut to square"; "Edges not clean cut," etc. One of the most common irregularities and in fact a condition habitual with some mills, is that of running to extreme variation in weight and caliper throughout an order. Specimen inspection reports to be cited show a fair average variation in these two characteristics in a mill producing very high grade products. In many instances, more accurate control of stock consistently would result in a great improvement.

As the source of many of these items is, fundamentally, irregularities in mill operation, they will be treated in more detail later.

In connection with the installment of this series which appeared in "Paper" Nov. 20, 1924 should be consulted.

Specifications

Many commodities as valuable, and used in as large amounts as, paperboard, are bought under the most rigid specifications and inspection standards, but until quite recently, little attention has been paid to these matters in the purchase of many grades of paperboard. Possibly this has been because paperboard has been considered as just "board"; but, in any case, the inconsistency of this attitude is evidenced when it is considered that nearly all concerns of fair size now buy their coal, worth perhaps $10 per ton, on laboratory reports and rigid specifications. Paperboard is worth five times as much and sometimes more.

Taking into consideration the present over-equipped condition of the paperboard industry in comparison with the demand, the intrinsic value of the products, the quantities purchased, the average size of single orders and the probability that the present "buyer's market" will continue for a long time to come, is probable that more and more attention will be given to this matter of more accurate and scientific specifications in the purchase of paperboard in order to take advantage of conditions and to apply the yardstick of greatest value received per dollar spent. It is a fact that, under present conditions, certain mills are compelled to make board which is smoother, harder, or damper than is actually necessary for the requirements of their customers, and which at the same time is below the best standards of these mills, simply from the necessity of following the customer's specifications—vague, incomplete or missing except as to caliper, weight and sheet or roll size.

Knowing nothing of how the board is to be used after leaving the mill—whether, as in the case of folding boxboard, for example, the board is to be used plain, printed or lithographed—knowing nothing of the buyer's requirements as to texture, formation, dampness, compactness, weight, hardness, stiffness, etc., the mill can only follow the meager specifications furnished and run the board to caliper, weight and size, leaving the other characteristics of the board—which have really a great deal to do with its quality—to turn out as they will.

Inquiries Compared

Let us look at this whole matter rather more specifically. Buyer A writes to several mills something as follows:

"Kindly give us your very best price per ton on a carload of White Patent Coated Newsboard, caliper .040. Price must be low to get the business."

Buyer B, being in the market for similar goods, likewise sends out several inquiries, but more after this fashion:

"Please quote us on a carload of White Patent Coated Newsboard, caliper .040.

"Board is to be used for folding boxes which are to be shipped as flat blanks, and to be printed (not lithographed) in two colors in large type. State highest sheetage basis for size 25 x 40 and price, both per ton of board and per thousand sheets of this size. With your quotation submit samples showing what in your opinion is the most suitable finish for our purpose and which you propose to furnish with this order."

"White Liner to be well closed up and have the pinkish tinge of enclosed sample market 'for shade'; must be free from dirt on both sides, and from hairiness; must have sizing, folding endurance and stiffness equal to the enclosed samples marked for your comparison as to these items. Board shall contain a maximum of 8 per cent and a minimum of 6 per cent moisture; and shall be well made, free from wire marks, lumps, checks, etc.; and shall have caliper and weight run uniformly throughout the order."

The first buyer gets exactly what he asks for and no more, viz., prices per ton. He has specified no other requirements, sent no samples, and given not the slightest clue as to the uses to which the board will be put or the peculiar necessities of these uses. Consequently, he gets no information as to what he may expect to get in a shipment of board and no criterion by which he can measure the products of this mill against those of its competitors—both the price competitors and the quality competitors. Moreover, this kind of an inquiry will, largely, get replies from the low price mills which make board to price rather than to quality, and few if any replies from the high class, quality mills which will not usually accept orders unless they can make a profit and who cannot afford to do much business on a purely price basis. Consequently, this buyer will probably get lower quality board which in turn will reflect itself in the cost figures of his product.

Bulk and Footage

Before considering the second type of inquiry, consideration of the two items "(17) Bulk, or weight for bulk" and "(21) Area per unit weight" ("Footage," "Yardage" or "Sheetage") will be taken up.

In the last analysis, board is used to cover surfaces—whether in boxes, cartons, trunks, shoes, etc. By this is meant that the *area* which a certain weight of board will cover, other things being equal, usually indicates the value received by the board consumer from his point of view. This means, in effect, how far,—in square feet, square yards or other unit,—will the weight of board ordered go in my product and accordingly, how much will my board (material) cost be per ton of my product?

Use of Gage Lists

The present gage lists, compiled several years ago, do not, at the present time, show accurately what certain mills are able to do, although they do reflect the operations of the larger number of mills, especially the lower quality ones which have not given much thought to furnishing the dealer more and better board per ton of paper stock. It is not practical at present to revise the lists as a whole, because for every mill which they do not represent to the best advantage there are ten which they do.

A buyer who gets his board from the usual run of mills, will figure just as the gage lists indicate, viz. that a folding boxboard with a good printing surface (No. 3 Finish) in .040 caliper (Regular No. 45) should turn out 1800 sheets of 26 x 38 (12,350 square feet) to the ton of 2000 pounds. His competitors using the same board, possibly bidding for the same business as the first buyer, and dealing with a more advanced mill, estimates, and correctly, that this board will turn out 2,200 sheets of 26 x 38 (Regular No. 55) (15,163 square feet) to the ton. The difference in the *"sheetage"* or *"yardage,"* in favor of the more advanced mill (and in favor of the buyer) is therefore 15,163—12,350 or 2,813 square feet of board more at the same cost. The significance of the terms "sheetage," "footage" or "yardage" will now be apparent.

The "footage" obtainable from a ton of board of any kind, is directly dependent on its "bulk" or weight per unit area, at a given thickness. Bulk, in turn, is affected by a great many different factors in board manufacture—factors whose degree, individually and collectively, is affected by the policies, equipment, labor, materials and management of the plant.

Expressed numerically, the comparative bulks of the two boards given as examples above are as follows:

.040, Regular No. 45, 50 lb., (taken as unity) = 1.00
.040, Regular No. 55, 50 lb., = 1.23

As the "footage" is directly dependent on the bulk, the figure 1.23, obtained by dividing 15,163 square feet by 12,350 square feet, also expresses the comparative "footages as a ratio." The figures and ratio cited express results which are both obtainable in practice and which can be realized by purchasers.

It is because of the great decrease in footage, or to put it another way, the great increase in weight per square foot, resulting from the use of mineral fillers in board, that most mills no longer use china clay or pearl filler in the white liners of folding box boards. Barytes is a filler which makes board especially heavy. Other factors causing poor "footage" or bulk, are prolonged beating, hard calendaring, excessive "grain" in the sheet, excessive moisture, and excessive foreign matter in the waste paper stocks used, especially chip and cheaper news paper packings.

Importance of Tensile and Folding Tests

In this connection, the importance of making tensile strength and bending strength tests both with and against the "grain" of the sheet might be metioned, though this is not customary practice at present. A comparatively high tensile strength across the sheet indicates a comparatively large number of fibers crosswise of the lengthwise fibers, which in turn means more air spaces between them and, if the sheet is not loaded, as is usually the case, more bulk than is the case where most of the fibers run lengthwise of the sheet and it has most of its tensile strength in the machine direction. In case filler has been used in the manufacture, if there is considerable strength across the sheet the probability is that there will not be as much filler present as where most of the fibers lie lengthwise, since, other things being equal, owing to the more loosely knit and open formation, the retention of the filler will be less.

Apparent Specific Gravity

In order to determine the comparative bulking or "footage" of two samples of board, the apparent specific gravity of each can be determined from the following formula, and from these figures as a basis, the number of sheets of each of a certain size, necessary to make a 50 pound bundle, can be computed.

Formula for Apparent Specific Gravity

$\frac{W}{V}$ = specific gravity (apparent) where:

W—equals weight of a small, measured board sample.

V—equals the volume of the sample weighted, i. e., its area × times the caliper in thousandths of an inch.

The sample or samples should be accurately cut to a given size and weighed on scales which are accurate to at least three decimal places. The sample showing the largest specific gravity will, of course, give the smallest "sheetage."

Good yield from a ton of paperboard stock, then, implies, usually, good sheetage which in turn implies a bulky sheet. For many purposes bulk is very desirable, but there are cases, especially in the case of boards for lithographing, where there are needed a very fine texture with a well beaten liner, closely knit fibers and a high (No. 4) finish.

Such a board necessarily gives smaller sheetage than in cases where more bulk is permissible. In the case of lithograph board, and many others where high sheetage cannot be expected, there is still no excuse for excessive moisture or heavy loading with clay or mineral hardeners. Of course, there are exceptions where hardness, compactness, weight or dampness or all these characteristics may be desirable and in such cases, much cannot be expected in the way of good covering power and bulk.

Specifications Again Discussed

Let us now return to the inquiries sent out by Buyer B mentioned above. This letter, sent out by a buyer who appreciates the advantages of real quality and efficiency in his purchases, will go more to the larger mills which have the reputation of being high-priced and full of orders, rather than to those reputed to be low-priced and short of orders; and also to the mills which have the reputation of being run by expert paperboard superintendents. This buyer knows that in the long run, such mills are the most economical from which to buy.

His inquiries indicate several things to mill managers:

1. Exactly what the buyer wants, as to quality as well as in the way of sheetage.

2. What the board is to be used for, i.e., for plain printing, in which case the buyer will expect to receive greater sheetage than were the board specified for lithographing.

3. The bending requirements, i.e., that it need not be such that the board will stand a complete fold but only enough to permit the board, shipped flat, to be half oiled when locked up.

4. That the buyer understands the common defects and irregularities occurring in board and is on his guard against them, and that he either tests his own board or has it done by some outside parties.

5. That he takes for granted that the mill understands its business thoroughly and is uptodate in its methods. And finally,

6. That he is willing to be guided by the mill's experience, samples, and recommendations in meeting his needs most advantageously.

To summarize a little, the results achieved by the quotations sent out by buyers A and B might be tabulated thus:

	Buyer A	Buyer B
Price per ton quoted	say $80	say $92
Sheetage guaranteed	None	2,200 sheets 26 x 38
Sheetage obtainable per ton of board	1,800	2,200
Cost per 1,000 sheets	$44.44	$41.81

Specimen Inspection Reports

Reference was made to specimen inspection reports showing a fair average variation in folding boxboard, in a mill making a high standard series of products of this kind. Two of these are given:

WHITE PATENT COATED NEWS

Cutting the following sheets:
27¼ x 44½—.030—255 ream weight. (Called Sheet 1)
36½ x 51½—.030—473 ream weight. (Called Sheet 2)
Samples of each taken every hour.

Sheet	Remarks	Time	Caliper	Ream weight
1.	Caliper heavy. Wild, dirty.....	7.45	.0135	258
2.	Wild, dirty.....	7.45	.0130	470
1.	Ream weight and caliper light.....	8.45	.012	230
2.	Ream weight crushed.....	8.45	.012	428
1.	Caliper heavy. Wild.....	9.45	.014	250
2.	Caliper heavy. Wild.....	9.45	.014	468
1.	Ream weight light.....	10.45	.013	216
2.	Ream weight light.....	10.45	.013	424
1.	Ream weight light.....	11.45	.013	220
2.	Ream weight light.....	11.45	.013	432
1.	Caliper heavy. Ream weight light..	12.45	.0135	228
2.	Caliper heavy. Ream weight light..	12.45	.0135	437
1.	Caliper heavy. Dirty.....	1.45	.014	250
2.	Caliper heavy. Dirty.....	1.45	.014	464

BLEACHED MANILA LINED CHIPBOARD

Cut in sheets 39 x 58¼—.020—605 ream weight

Remarks	Time	Caliper	Ream weight
Ream weight heavy. Wild.....	8.00	.020	632
Ream weight heavy. Wild.....	9.00	.020	640
Wild.....	10.00	.020	600
Caliper slightly light. Wild.....	11.00	.0195	612
Caliper slightly light. Wild.....	12.00	.020	608
Caliper slightly light. Wild.....	1.00	.020	612
Caliper light, damp. Wild.....	2.00	.019	600
Caliper light, damp. Wild.....	3.00	.019	604
Caliper slightly light. Wild.....	4.00	.0195	612
Ream weight and caliper light. Wild	5.00	.0185	568

It will be noticed that the Bleached Manila Lined Chip order, on the whole, ran quite uniformly except at the start and finish. In this particular case, the wildness of the sheet could not have been corrected without additional equipment. The variation in the White Patent Coated News order, however, was much greater—in fact, more so than should have been the case.

Ppoperties Evaluated by Personal Judgment Only

"Properties Evaluated by Personal Judgment Only," referred to above will now be briefly touched upon.

"Hardness," is largely a function of "Compactness" but is also affected by the amount of hydration received in the beaters (not very much in the usual board mill, however), by steaming (in the case of steamed groundwood pulp boards such as imitation jutes), by hardening materials as silicate of soda added to the beaters, and by the formation on the cylinder molds. The hardness and natural rigidity of the fibers is also an influence, as in the case of strawboards. It is possible that some relation might be worked out between "Compactness" and "Hardness" by measuring compactness in terms of "inverse porosity" by a porosity tester, such as the Gurley Densmeter or by some modified form of hardness tester as the Shore Sceleroscope.

"Feel" is an especially elusive and indefinite quality to reduce to definite descriptive terms, to say nothing of the practical impossibility of evaluating it numerically. Some folding boxboards have a "silky" feel, especially those made with Nos. 3 and 4 finishes. Others of the same grade, made by another mill, will feel "flabby" or "punky." Differences in the content of size, presence or absence of stiffening agents, excessive filler which destroys the size and thus makes the sheet "limp," excessive moisture which gives the same effect,—these are some of the factors which affect the "feel" of a sheet, not to mention the characteristics—intrinsic or added—of the various fibers.

"Dirt" in board can be reduced to numerical evaluation, but for all practical purposes, visual comparison and estimation is all that is usually necessary. Of course, discretion and judgment should be used in deciding whether a shipment is too dirty or not. Small pieces of metal, asphalt spots, undefibered paper stock, rubber, cloth, string, etc., are allowable in a cheap chipboard where good appearance is not necessary or desirable, while such things would be inadmissable in the filler or liners or board to be printed or lithographed.

"Printing quality" is a composite of many of these factors and presupposes the absence of "Hairiness" or whiskers which clog the type. Freedom from felt marks and good finish are also assumed, together with close formation. It would seem that some simple and standard small-scale duplication of printing and lithographing, or their equivalents, might be developed for use in folding box board mills, to give practical tests of value.

NOTE—This concludes the division "Examination of Paperboard and Allied Products for Quality" which began in "Paper Trade Journal, April 9, 1925." The next installment of this series (VIII) will treat of Raw Materials—their kinds, inspection, sorting and purchasing. As mentioned in the first installment, in "Paper" June 26, 1924, the two classes of boards "Binders and Fiber Board" and "Miscellaneous Boards" will be taken up individually at the end of this series, as well as the raw materials used by these grades.

The Efficiency of a Jordan

SPECIAL INQUIRY No. 26.

A member wants to know:

1. If a small jordan is more or less efficient than one of large size.
2. What effect the size of the plug has on the efficiency.
3. The effect of the speed on the efficiency.

RESPONSE.

The jordan is usually made in three fairly standard sizes—small, medium and large—but with a wide variety of fillings both in material and design. There are also various arrangements for the introduction and outlet of the stock, particularly as affecting the pressure under which the stock is held while being refined. The member might have included in his questions the effect on the efficiency of these points.

The basis of calculating the jordan efficiency would probably be the kilowatt-hours required to refine a ton of a given stock between identical initial and final conditions, determined by microscopical examination, the freeness test, or a combination of both.

There is something on refiners in Volume IV and also in Witham's book, but I do not know of any work having been done to determine the relative efficiency of jordans or refiners of the different sizes or of the many different designs. Generally the choice is based on personal preference or the practice of some other plant. On some grades of paper, particularly kraft, two or more jordans are used in series while with a few grades they are placed in parallel.

I shall be glad to handle the discussion on this inquiry and to send a transcript of the replies, in blank, to members who participate. Replies should be as specific as possible.

W. G. MACNAUGHTON, Secretary.

Lubrication

The treatise on Lubrication in the Pulp and Paper Industry, which was published in the October and November (1924) numbers of *Lubrication*, the house organ of the Texas Company, 17 Battery Place, New York City, has been translated into the French language. While intended primarily for its European customers it should be welcomed on this continent, especially by the pulp and paper students in the Province of Quebec.

The treatise was prepared by Norton Bronson of the Texas Company after a close personal investigation of a large number of paper mills, and a study of their costs of lubrication and the factors which affect them. While it was written for a sales development of the Texas products, it is well worthy of study by all paper mill executives and engineers.

Effect of Temperature and Time of Storage on the Physical Properties of Undeveloped Brown Print Paper*

By T. D. Jarrell and F. P. Veitch Bureau of Chemistry, U. S. Department of Agriculture

The Government and commercial firms and individuals engaged in engineering and construction work use brown print paper in large quantities for preparing negatives from original drawings on tracing cloth. Brown print is necessary where many blueprints of the same drawing are to be made. Because undeveloped coated paper deteriorates in strength very rapidly, thus causing inconvenience and loss to both makers and users, it is the general practice to purchase recently sensitized paper and to use it promptly.

An investigation on the effect of the commercial brown print sensitizing materials commonly used in this country on the physical properties of the paper to which they were applied previously reported[1] showed that when coated brown print paper was kept at ordinary temperatures for only two weeks before developing and washing its folding endurance was reduced approximately 75 per cent in comparison with that of the same paper uncoated. Soon after the account of this work was published results were obtained which indicated that the temperature at which the undeveloped coated brown print paper is kept between the period of coating and drying and that of developing and washing influences the effect of the sensitizing materials upon the physical properties of the paper.

The present article gives the results of the investigation undertaken, as an extension of the work previously reported, to determine to what extent the deteriorating effect of the commonly employed sensitizing materials on brown print paper is affected by temperature, and to determine under what temperature conditions coated brown print paper may be preserved longest.

Procedure

Three 15-yard rolls of freshly coated high-grade brown print paper, weighing 16 pounds per ream of 17 x 22 in., of all-rag stock, were obtained from three coaters in May, 1924. The sensitizing materials and the method of coating employed were those regularly used by these coaters.

Immediately after coating and drying each roll was subdivided into four rolls of approximately the same length and numbered for identification. Rolls 1.1, 1.2, 1.3, and 1.4 were coated by coater No. 1 on May 27, 1924; rolls 2.1, 2.2, 2.3, and 2.4 were coated by coater No. 2 on May 28, 1924; and rolls 3.1, 3.2, 3.3, and 3.4 were coated by coater No. 3 on May 29, 1924. These twelve sub-rolls were immediately securely wrapped in three different packages, each of which contained four rolls from the same coater, and all were sent to the laboratory in Washington, D. C. All packages reached the laboratory on May 31, 1924. On the same day they were assembled in a room maintained at 70° F., and sub-samples about 2 feet wide were cut from the entire width of each of the twelve rolls. Each sub-sample was then immediately exposed on an electric blueprint printer, washed for 15 minutes by immersion in a tank of cold running water, and air dried.

Immediately after taking the sub-samples the rolls were securely wrapped and placed in four tin tubes, with closely fitting caps, to be stored at various temperatures. One roll from each of the three coaters was placed on each tube. The tube containing rolls 1.1, 2.1, and 3.1 was placed in a refrigerating room kept at a temperature between 35-40° F.; the tube containing rolls 1.2, 2.2, and 3.2 was stored in another refrigerating room at 55-60° F.; the tube containing rolls 1.3, 2.3, and 3.3 was stored at 70° F.; and the tube containing rolls 1.4, 2.4, and 3.4 was stored at 86° F.

In order to determine the effect of these temperatures on the physical properties of the undeveloped coated paper, sub-samples were taken from the rolls at the same time at intervals of 1, 2, 4, 8, 12, and 20 weeks after they had been stored under temperature control. They were immediately exposed, washed, and air dried in the manner just described. The exposed and washed samples were placed in the constant temperature and humidity room and allowed to condition at 65 per cent relative humidity and 70° F. for at least 48 hours. They were then tested for folding endurance, wet tensile strength, and bursting strength. Strips for the two tests first mentioned were cut in the transverse direction, i. e., at right angles to the machine direction of the sheet. The strips for the wet tensile strength tests were soaked in water at 70° F. for 20 minutes before testing. Ten tests were made on each sub-sample in the case of folding endurance and bursting strength, and six tests in the case of wet tensile strength.

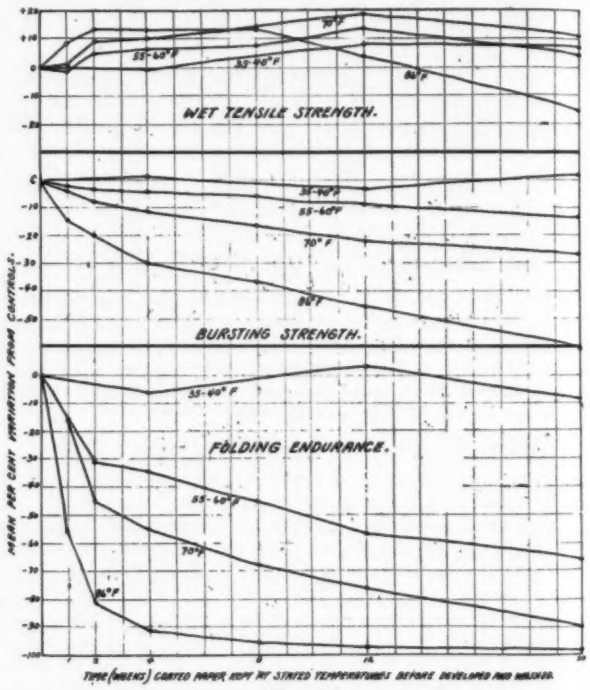

Fig. 1.
Effect of Temperature and Time of Storage on Physical Properties of Undeveloped, Coated Brown Print Paper.

The effect of the various temperatures and periods of storage used in this investigation upon the folding endurance, wet tensile strength, and bursting strength of the undeveloped coated paper is expressed in Figure I as percentage gain or loss, calculated from the results of all sub-samples developed and washed when the rolls were first stored in the room maintained at the given temperatures.

Discussion of Results

Since the results obtained on the samples prepared by the three coaters are in fairly good agreement with respect to the effect of the temperatures at which undeveloped coated paper was stored, only the average of the composite samples are shown in the graph and considered in the discussion which follows.

*Read before Section C, 79th Meeting, American Association for the Advancement of Science, January 2, 1925.

[1] Paper Trade Journal, vol. 78 (April 24, 1924), No. 17, p. 45.

There was no deterioration of the coating material itself; all sub-samples developed, regardless of the temperature and time of storage, gave as good a print as when they were first coated.

Folding Endurance

Effect at 35-40° *F.*—Four weeks after coating the mean decrease of all samples in folding endurance was 7 per cent; in 12 weeks an increase of 3 per cent was obtained; and in 20 weeks the mean decrease was 8 per cent; practically the same as in 4 weeks. The slight discrepancies are within the usual limits of error.

Effect at 55-60° *F.*—Two weeks after storing the mean decrease in folding endurance was 31 per cent; at the end of 20 weeks the decrease was 66 per cent.

Effect at 70° *F.*—At the end of two weeks the mean decrease was 45 per cent; in 20 weeks the folding endurance decreased 90 per cent.

Effect at 86° *F.*—Two weeks after storing the mean decrease was 81 per cent; at the end of 20 weeks the decrease was 99 per cent.

Bursting Strength

Effect at 35-40° *F.*—Four weeks after storing there was an increase in bursting strength of 1 per cent; in 12 weeks a decrease of 3 per cent; in 20 weeks an increase of 2 per cent.

Effect at 55-60° *F.*—At the end of two weeks the decrease was 3 per cent; in 20 weeks the decrease was 13 per cent.

Effect at 70° *F.*—Two weeks after storing the decrease was 8 per cent; in 20 weeks the decrease was 27 per cent.

Effect at 86° *F.*—At the end of two weeks the decrease was 20 per cent; in 20 weeks the decrease was 61 per cent.

Wet Tensile Strength

Effect at 35-40° *F.*—Four weeks after storing the mean decrease in wet tensile strength was less than 1 per cent; in 12 weeks there was an increase of 8 per cent; in 20 weeks the increase was 7 per cent.

Effect at 55-60° *F.*—At the end of four weeks there was an increase of 6 per cent; in 20 weeks an increase of 5 per cent. The maximum increase at this temperature, 13 per cent, was reached in about 12 weeks after storing.

Effect at 70° *F.*—Four weeks after storing the mean increase was 10 per cent; in 12 weeks it was 19 per cent; in 20 weeks the increase was 11 per cent.

Effect at 86° *F.*—At the end of four weeks the mean increase was 13 per cent; in 12 weeks there was an increase of 5 per cent; in 20 weeks there was a decrease of 15 per cent.

Conclusions

The temperature at which undeveloped coated brown print paper is kept between the period of coating and drying and that of developing and washing influences the effect of the sensitizing materials upon the physical properties of the paper.

Undeveloped brown print paper can be kept at 35° to 40° F. for at least five months without any deterioration in strength.

The folding endurance of well-made all-rag paper is decreased about 30 per cent when it is stored for 2 weeks at 55-60° F., about 45 per cent when stored for the same period at 70° F., and about 80 per cent when stored for two weeks at 86° F. As the period of storing the undeveloped coated paper at these temperatures is prolonged, the folding endurance and bursting strength progressively decrease.

In order to conserve the durability of brown print paper, coaters and users of brown print papers should keep the undeveloped sensitized paper at a temperature of not more than 35° to 40° F.

Effect of Sunlight on Rosin*

By J. Chintshin**

Studies of rosin exposed to sunlight were made at the Government Paper Testing Station, Moscow, under the writer's supervision. Although the work has not been completed, a preliminary report on the results so far obtained seems advisable. The results are:

I. The action of the rays of the sun on rosin causes the formation of a stable form of rosin, which is insoluble in petroleum ether. This stable form, however, partially returns to the original unstable form under certain physico-chemical conditions as, for example, during the process of paper sizing.

II. The reversion to the unstable form is also observed during solution of the stable form of rosin in alcohol, ether, etc., although to a smaller extent.

III. Data are available which justify the assertion, that when the stable form is in a colloidally dispersed state, the reversion to the unstable form is especially favored by absorbtion processes.

Based on these and other experiments, the author has formulated a definite view of the causes for the formation of a stable form of rosin under the influence of certain light and electric rays, some properties of this rosin being: low sizing value[1], insolubility in petroleum ether, raised melting point. This view, which is offered as a working hypothesis, follows:

a. The action of some light and electric rays on rosin results, chiefly, in a change of the dielectric constant and in agglomeration[2] of the rosin molecule, causing the formatoin of the stable form of rosin with all its properties.

b. Through chemical reactions causing a rearrangement of atoms and molecules, also under the influence of other factors, like red heat rays[3], the dielectric constant changes again, the rosin molecule disagglomerates and the unstable form of rosin is reestablished.

A complete report of the work will be published later.

*Translated from Bumazhnaia Promyshlennost (Russia), 3, No. 12, 727-8, Dec., 1924, by M. L. Caust. See Paper Trade Journal for July 10, 1924, p. 41; Mar. 27, 1924, p. 119; Mar. 15, 1923, p. 50.

**Director of the Govt. Paper Test. Station, Moscow.

[1] Schwalbe, Pap. Fabr., No. 44, 1923.

[2] This term is borrowed from H. Wislicenius u. W. Gierisch, Kolloid Zeitschrifft, b. 34, h, 3, 1924.

[3] Paper Trade Journal, July 10, 1924, p. 41.

Test Paper for Label Use

Washington, D. C., May 11, 1925.—Further work has recently been done by the Paper Section of the Bureau of Standards as regards labels for use by the Library of Congress. Several different kinds of paper were tested and selection made for service trials in the Library. In this connection, the Paper Section continues in a statement:

"Some investigation was also made as regards the use of decalcomania paper. This is a transfer paper, the surface being coated so that upon moistening the basic paper, any design made on the coated surface may be transferred. Papers of this type with designs printed on them were secured and the designs transferred to various kinds of cloth book bindings. Tests were made in the Paper Section as regards the durability of the design upon subjecting to folding, the Schopper folding tester being used. Poor results were obtained, the decalcomania designs readily disintegrating and peeling away from the cloth."

Corporate Members of TAPPI

Since the last publication of members, the following companies have approved the work of the Technical Association by taking Corporate Membership:

Anglo-Newfoundland Development Company, Ltd., Grand Falls, N. F.—G. F. Laycock, Director.

Hammermill Paper Company, Erie, Pa.—W. F. Bromley, Secretary.

Zellerbach Corporation, San Francisco, Calif.—J. D. Zellerbach.

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Bleaching

Effect of Physical Conditions on the Rate of Bleaching of Paper Pulps. J. H. Bell. *Proc. Tech. Sec. Papermakers' Assoc. Gt. Brit. & Ire.* 5, 24-49 (1924). A series of bleaching tests were made on easy bleaching sulphite, strong sulphite, easy bleaching soda and esparto at 17° and 35° C. with a consistency of 2.5%. The time of bleaching was 24 hr. at 17° and 3 hr. at 35° C. A relation between the amount of bleach added and consumed was obtained and plotted as a graph. The amount of pulp used in each test was 10 g. The residual bleach was estimated by the iodine-thiosulphate method. It was found that under the same conditions of bleaching (except for the per cent of bleaching powder used) each wood pulp was bleached to about the same extent, when it had consumed the same per cent of the initial bleach added. Esparto showed a great difference from wood pulp and could not be correlated with the latter. Another series was made in a model beater holding 800 g. pulp at 2% consistency, using 10% of bleaching powder. The time in minutes required to obtain 50% consumption of bleaching powder at 16.3°, 27.4°, 34° and 39.5° C., was respectively 41, 83, 162 and 480. At the low consistency used, increased agitation did not speed up the bleaching, except in one test where a kollergang was used during bleaching. Very severe agitation of the pulp before or during bleaching did not improve the final color but tended to make it worse. Oven drying of the pulp prior to bleaching was also detrimental to good color. More rapid bleaching took place and better colors were produced in sunlight than in subdued light or in darkness. Increasing the pulp consistency from 1 to 6% did not have a marked effect on the speed of bleaching.—C. J. W.

Use of Chlorine Water in Paper Making. *Boll. Staz. Sperimentale,* per l'Indus. della Carta, o. 4, Apr. 1924. The author devotes most of his article to a discussion of American methods of using bleaching gas, with a general statement of its merits.—P. B.

Determination of Available Chroline in Bleaching Powder by Means of Sodium Nitrite Solution. Zoltan Kertesz. *Pulp & Paper* 22, 331-332 (Mar. 20, 1924); *World's Paper Tr. Rev.* 81, 766 (Mar. 7, 1924). See *Pulp & Paper* 22, 1066-1067 (Oct. 16, 1924); *Paper Trade J.* 79, No. 10, 51 (Sept. 4, 1924).—A. P.-C.

Bleaching Paper Pulp. P. Souchon. Eng. pat. 220,137, July 10, 1923. In a continuous process for the bleaching of pulp the latter is passed through a series of vessels, to the first of which a solution of hypochlorite is supplied, the acid being introduced into a vessel later in the series; to the last vessels of the series water is supplied for the purpose of washing the pulp.—A. P.-C.

Continuous Circulation System for the Cooking, Washing and Bleaching of Paper Pulp. *Cellulose et Papiers.* Addition No. 27,346 to Fr. pat. 569,492. The circulation system described in the main patent as applied to the cooking of grasses, etc., is applied to the washing and bleaching of pulp. The essential points are that provision must be made to add water at a suitable point, and that a screen must be supplied through which the dirty water can be removed. When applied in bleaching, the apparatus must be constructed of chlorine resistant material.—A. P.-C.

Driers and Drying

Heat Consumption and Ventilation in the Paper Machine Room and Drying Machine Room. Torsten Samson. *Svensk Pappers-Tid.* Nos. 17, 18, Sept. 15 and 30, 1923. Steam consumption for drying paper on the cylinders is often incorrectly estimated. It cannot be said with precision that the consumption of steam per kg. of paper has an invariable figure for a certain paper or drying machine. Theoretically the calculation of the quantity may be made as follows: Let the variables e_1 and e_2 equal the per cent of dry substance before and after the driers, and G equal the quantity of water removed by drying from 1 kg. of paper; then $G = \frac{e_2 - e_1}{e_1}$. For example, when the steam consumption for heating the drying air in the machine room is calculated, the calorific value of the specific heat of the air is 0.238 cal. per kg. at 0° C., and that of the heat required to raise 29.5 kg. of air from 10 to 36° is 182.5, while the heat in 1 kg. of saturated steam at 36° is 611.6, the steam consumption then is $\frac{794.1}{520} = 1{,}527$ kg. per kg. of evaporated water. Elaborate curves and equations are given showing the calculations of steam consumption for the paper machine, cylinders, ventilation, and for measuring the moisture content of the air.—P. B.

Drying Paper. C. H. Leicester. *Paper Trade J.* 79, No. 17, 47-48 (Oct. 23, 1924). A discussion showing the great increase in the cost of drying with increase in the moisture content of the sheet as it reaches the driers, and bringing out the importance of the efficiency of water removal by mechanical means at the wet end of the machine.—A. P.-C.

Festoon Drier. F. Hinnekens assignor to Van Vlaanderen Machine Co. U. S. pat. 1,494,307, May 13, 1924. The "sticks" or "rods" carrying the loops are made of relatively large diameter, and are each constructed of a shaft carrying a number of spiders to which are secured a number of equally spaced slats, thus forming a cylinder of which the shaft is the axis. At each end of the shaft is a pinion meshing with a fixed rack, so that as the rods are driven through the drier the pinions make them rotate. This construction has the twofold advantage of preventing the rods from marking the paper, and of ensuring more uniform drying.—A. P.-C.

Drying of Paper. William F. Goldsmith. *Paper Mill* 48, No. 43, 4, 6, 48 (Oct. 18, 1924); *Paper Making* 43, 595-597 (Nov. 1924). Discussion of the factors affecting driers, with indications for effecting marked economies, based on results of much investigation and many tests run at the Pejepscot Paper Company's mill.—A. P.-C.

Caterpillar Paper Drier. John W. Brassington. *Paper* 34, 1135-1137 (Oct. 9, 1925). A detailed description of a caterpillar type of paper drier (patents for which are pending), in which the cylindrical surfaces of the standard paper machine drier are replaced by straight line heating surfaces. The unequal stresses on a continuous sheet set up in the standard roll drier by shrinkage, tension and irregularities of surface speeds are non-existent in the caterpillar straight-line type, in which the paper is dried between two felts at a constant temperature of 212° F.—A. P.-C.

Factors Affecting the Life of Canvas Drier Felts. *Paper* 34, 1158 (Oct. 9, 1924). A brief discussion of the factors involved, with a plea for a complete analysis of all the details of the drying process sueh as has been made of the manner in which water is removed by the presses.—A. P.-C.

Paper Drying. C. H. Leicester. *Paper Trade J.* 79, No. 15, 47-48 (Oct. 9, 1924). A discussion of the importance of controlling the temperature, quantity and distribution of the air supplied to the drier sections of paper machines in order to obtain maximum efficiency in drying.—A. P.-C.

Paper Drying Apparatus. F. P. Reed assignor to Waterford Art Papers Inc. U. S. pat. 1,500,592, July 8, 1924. The paper passes into a drying chamber heated to a temperature of 300° to 350° F. in any suitable manner, but preferably by means of inchrome

electric heating elements so arranged as to heat both sides of the paper equally. The paper is supported and guided through the chamber by means of reels of skeleton construction which also agitate the air to bring it more readily into contact with the paper. —A. P.-C.

Festooning Machine for Carrying Paper. W. H. Waldron assignor to J. Waldron Corp. U. S. pat. 1,499,134, June 24, 1924. The purpose of the invention is to provide means for automatically turning the sticks carrying the festoons, so as to prevent the marking which occurs when the paper remains in the same position on the sticks until it is dry. The sticks are round, and the ends are flattened to engage H-shaped blocks at each side of the machine. As the sticks are carried forward by the chains, they engage the H-shaped blocks, which are pivotally suspended in such a manner that the motion of the sticks forces them to turn through an angle of 180°.—A. P.-C.

Electrically Heated Paper Machine Drying Roll. R. P. Moodie. U. S. pat. 1,497,223, June 10, 1924. The roll is heated by passing an electric current through a thin, high-resistance metal shell, which is insulated from the body of the drier roll by means of asbestos. The shaft is broken inside the drum and connected by means of an insulating coupling to prevent the current from passing directly from one end of the drier to the other through the shaft. Near one end of the heating shell is a circumferential groove which can take up all longitudinal expansion due to the heating. The rolls are insulated from the rest of the machine and are connected in series by their alternate ends. The temperature of the various rolls can be made to increase gradually from one end of the series to the other by increasing the resistance of the various rolls correspondingly.—A. P.-C.

Method of Drying Double-Faced Corrugated Board. R. E. Jones assignor to Robert Gair Co. U. S. pat. 1,497,446, June 10, 1924. The strawboard is passed through corrugating rolls, a jute liner applied to one face, and the board passed over a heating surface to dry the adhesive. The second liner is then applied and the double-faced board passed through a heating chamber. The board itself is in contact with a heating surface. Air is passed under the heating surface to heat it, and from there part of it passes over the board and part of it passes through the corrugations. In order to prevent the air passing through the corrugations from lifting the top liner from the corrugated board, a baffle is provided above the board to hold back the air and create a somewhat greater air pressure above than inside the corrugations. It is claimed that this machine gives a more uniform and better quality product, that drying is so thorough that the board need not be stacked to allow it to dry out completely, and that the machine can be run at approximately twice the speed of other machines, viz., about 170 instead of 90 ft. per min.—A. P.-C.

Unit Festoon Drier for Wall Paper and Coated Paper. U. S. Pat. 1,478,938, Dec. 25, 1923. The apparatus consists essentially of two superimposed units of substantially identical construction, each divided by a longitudinal vertical partition into two parallel passageways, through one of which passes the festoon while the other is provided with heating pipes. Each passageway is further subdivided by transverse partitions into individual compartments. The air from each one of the heating compartments passes into the adjoining festoon compartments, from which it passes on to the following heating compartment to be reheated. The circulation of the air is effected by means of a series of fans or blowers which are mounted on a common shaft to ensure of their having the same speed and handling the air at the same rate. By means of appropriate baffles, etc., the air currents travel both downward and sideways in the festoon. Two or more units can be used, and the ducts leading from one to another are provided with doors or shutters which operate automatically when one or more of the units are cut out.—A. P.-C.

Pulp and Paper Testing

Method of Making Uniform Fiber Sheets for Test Purposes. Merle B. Shaw and George W. Bicking. *Paper Trade J.* 79, No. 21, 51-53 (Nov. 20, 1924). The sheet mold, which is described in detail, consists essentially of a 10 x 12 x 6 in. deckle box, clamped to a screen plate drilled with ½ in. holes and covered with a 10-mesh and with an 80-mesh wire, which rests on a mold support fitted with a quick-opening gate valve which, for suction purposes, is connected to a steam ejector below. The sheet press was made by fastening the upright supports of a letter press to the base of platform scales, so that the pressure applied could be measured by the weights added to the lever arm for balancing. The technique of the operation of the apparatus is described in detail. Test data given indicate that sheets made in this manner are uniform, that the fibers are uniformly distributed, and that the suction mold as constructed eliminates the many desirable factors of the hand mold.—A. P.-C.

New Pulp Testing Outfit. *Paper Mill* 48, No. 30, 16 (July 26, 1924). A description of the new form of the Williams standard pulp testing outfit, designed and built to conform to the rules adopted by TAPPI and the Canadian Pulp and Paper Association. —A. P.-C.

Freeness Control in the Pulp and Paper Mill. Frank M. Williams, *Paper Mill* 48, No. 44, 30 (Nov. 1, 1924); *Paper* 35, 143 (Nov. 13, 1924). A discussion of the importance of freeness control of groundwood in obtaining maximum production from each stone per horsepower per ton of pulp produced, and in obtaining uniformity in the quality of the groundwood sent to the paper mill. —A. P.-C.

Paper Testing. A. G. Rendall. *Paper Maker & Brit. Paper Tr. J.* 68, 375-379 (Oct. 1, 1924); *Paper Makers Monthly J.* 62, 419-420 (Oct. 15, 1924); *Paper Making* 43, 557-558 (Oct. 1924); *Pulp & Paper* 22, 1115 (Oct. 30, 1924). A discussion of the importance of paper testing in the manufacture and purchase of paper on an accurate "quality" basis (degree to which the paper is accurately suited to its requirements), with an outline of the various tests and of the interpretation of results.—A. P.-C.

Testing the Ink Fastness of Paper. Nicholas A. Stephens. *Paper* 34, 1142-1144 (Oct. 9, 1924). The Leonhardi, Post, Schluttig-Neumann, Kollmann, Teclu and Herzberg sizing tests are outlined, and their defects indicated. In the Stephens tester (described in detail), electrolyte is placed on opposite sides of the test sheet, and the time taken for an electric current to pass through (detected by means of a galvanometer) is taken as a measure of the degree of sizing.—A. P.-C.

Relative Humidity and Paper Testing. E. O. Reed. *Paper* 34, 1133-1134 (Oct. 9, 1924); *Paper Trade J.* 79, No. 15, 49-50 (Oct. 9, 1924). Additional data is presented in favor of the adoption of a standard testing condition of 50% relative humidity, because it is more in harmony with actual indoor atmospheric conditions and gives a direct comparison between the tests and actual serviceability of the paper.—A. P.-C.

A New Sizing Tester for Paper. F. T. Carson. *Paper Trade J.* 79, No. 17, 44-45 (Oct. 23, 1924). A description of an apparatus devised for carrying out the curl sizing test (*Paper Trade J.* 74, No. 14, 43-49, Apr. 6, 1922); and designed to make most of the operations automatic and relatively free from the personal equation, and which eliminates errors due to extraneous influences such as air currents and temperature variations. Two modifications of the test as previously described are: the test strips are cut diagonally and curl into a helix when wetted on one side; the test specimen is creased so as to produce a lever arm or pointer which magnifies the movement of the curling specimen.—A. P.-C.

Gas Analysis

Recording Analyzing Apparatus for Automatic Analysis of Gases. S. A. S. Krogh and P. H. Pedersen. U. S. pat. 1,474,097, Nov. 13, 1923. For recording carbon dioxide a definite

TECHNICAL SECTION, PAGE 189

quantity of the gas to be analyzed is drawn into a measuring pipette, passed through a solution which absorbs the carbon dioxide, and sent to a measuring device where its volume is measured and recorded. For recording the carbon monoxide, the gas freed from carbon dioxide is drawn from the second measuring device to another pipette, together with a definite quantity of air sufficient for combustion of the carbon monoxide. It is then driven through a chamber with an electric coil heated high enough to ensure complete combustion of the carbon monoxide to carbon dioxide, passed through a solution which absorbs the carbon dioxide, and finally sent to another measuring bell where the reduction in volume is measured and recorded. The apparatus is evidently suitable for the analysis of sulphur burner gases in the manufacture of sulphite acid. —A. P.-C.

Gas Analyzing Apparatus. R. E. Cooper and C. O. Sisler. U. S. pat. 1,475,000, Nov. 20, 1923. The apparatus is intended for the analysis of gases such as sulphur burner gases used for making sulphite cooking acid. Gas is drawn continuously from the main gas pipe by means of a water siphon and the sulphur dioxide dissolves in the water. The solution passes continuously into an electrolytic cell in which a constant level is maintained, and in which the electric conductivity of the solution is measured by a suitable instrument, such as a millivoltmeter. Any change in the sulphur dioxide content of the burner gases causes a corresponding change in the conductivity of the solution, which is indicated and recorded by a suitably placed and calibrated instrument, which is preferably connected to actuate an alarm mechanism when the composition falls outside predetermined limits.—A. P.-C.

Gas Analyzing Apparatus. F. F. Uehling. U. S. pat. 1,480,317, Jan. 8, 1924. The apparatus is adapted to the determination of combustible gases, such as carbon monoxide, in flue gases. The gas to be analyzed is filtered and dried, and is passed from a pipe at a constant predetermined pressure through a capillary platinum tube into a chamber from which it is discharged through a second capillary platinum tube identical with the first one into a second pipe in which the gas is maintained at predetermined constant pressure, which is lower than the pressure in the first pipe. The pressure in the chamber depends on the pressures in the two constant pressure pipes, and also on the drop in pressure of the gas as it passes through the two capillaries. This drop in pressure, in turn, depends on the temperature of the gas as it passes through the capillaries. The chamber is therefore connected with an indicating and a recording pressure gage, suitably calibrated to indicate the percentage of combustible gases. The platinum tubes are heated by passing an electric current through them, and as they are both in the same circuit and identical in every respect any variations in the current will have the same effect on both and will therefore have no effect on the pressure in the chamber. On passing through the first capillary, the combustible gases are burned, raising the temperature of the gas mixture and causing a change in the pressure inside the chamber.—A. P.-C.

Paper Specialties

Origin and Manufacture of Parchment Paper. E. Arnold. *Pulp & Paper* 22, 1155-1157 (Nov. 13, 1924); *Paper Making* 43, 604-608 (Nov. 1924). Practical manufacturing hints with a number of furnishes.—A. P.-C.

Parchmentizing Wood Pulp Articles. Alfred Tingle. *Paper* 35, 61-62 (Oct. 30, 1924). Boards or wood pulp articles consisting partly or (preferably) entirely of groundwood can be given a surface parchmentization by immersing in 57° to 60° Bé. sulphuric acid, washing with water, then with ammonia to neutralize the last traces of acid, and finally with water again to remove the ammonia. Where the pliability of the product must be preserved, it is passed through a 10% glycerin bath. The treatment, which results in purely superficial parchmentization, limits penetration so that the article can be easily given a coating of varnish or of adhesive, which will not be absorbed to any considerable extent, thus permitting of making waterproof and greaseproof containers.—A. P.-C.

TECHNICAL SECTION, PAGE 190

Paper Crêping Machine. Wm. A. Lorenz assignor to the Otaka Fabric Co. U. S. pat. 1,494,262, May 13, 1924. The moist web is passed around a main roll, to which it adheres, and between the main roll and an auxiliary or crêping roll, which has a somewhat lower surface speed than the main roll. The two rolls are placed close to but not in contact with each other. The speed of the paper being reduced when it reaches the crêping roll, while the main roll feeds it at a high speed, the paper is crêped or crinkled along transverse lines. The paper emerges at a slow speed practically equal to that of the crêping cylinder, and may be carried out around the latter and delivered from it. In order that the slow cylinder may set up the required resistance for the purpose of crinkling, its surface is preferably roughened or broken, so that the paper will not slip past it. In order to provide clearance in the slow cylinder to facilitate the crêping roll, the roll is grooved longitudinally, the grooves being preferably relatively small and close together. The two rolls are geared together so as to give the desired velocity ratio, irrespective of the actual linear velocity. The chief advantages claimed are better quality and more uniform product, with all weights of paper, practically complete elimination of breaks at the crêping roll, and possibility of crêping at much greater speeds than formerly.—A. P.-C.

Method of and Apparatus for the Manufacture of Imitation Leather. J. J. Warren. U. S. pat. 1,496,040, June 3, 1924. Usually the stock is chemically treated in a manner to impart the desired characteristics to the finished product, and is wound on the roll of any ordinary wet machine until a sheet of the desired thickness is obtained, after which it is cut and air dried. Manufacture of such webs on ordinary multiple-cylinder machines is not practical owing to the fact that the stock is heavy and has slight adhesive qualities, so that the plies do not stick together and to the felt, and after a few plies have been added the weight causes the sheet to drop off the felt into the cylinder vat. The inventor overcomes this difficulty by forming the suitably prepared stock into a number of separate sheets, each composed of one or more plies, preferably on a series of cylinder paper machines, and combining the sheets successively before drying until a web of the desired thickness has been formed. After each sheet has been combined with the preceding sheets the resulting web may be impregnated with a suitable liquid to impart the desired characteristics, and preferably the initial sheet is also impregnated before being united to the second sheet. The liquid may, however, be applied to the stock before it is formed into sheets.—A. P.-C.

Sulphurized Pulp and Paper Products. Wm. H. Kobbe. *Paper Trade J.* 79, No. 20, 32, 34, 36 (Nov. 13, 1924). An outline of investigations carried out by the Texas Gulf Sulphur Co. on various sulphur treatments applicable to pulp and paper products. The process consists essentially in impregnating the material with liquid sulphur which crystallizes in the pores and fibers. Impregnation is carried out by immersing the material in a bath of molten sulphur at 280° to 300° F., with or without pressure, for a period varying from two or three minutes to ten or twelve hours, according to the porosity, thickness and moisture content of the stock and the degree of impregnation desired. The possibilities of such treatment are indicated.—A. P.-C.

Machine for Carbonizing Paper. Wm. W. Latta. U. S. pat. 1,476,988, Dec. 11, 1923. The machine is placed between a printing and a cutting and folding machine, and is especially well adapted for use in making leaves of duplicate and triplicate sales books. The web from the printing press passes over a steam heated roll which dips into a hot molten mixture of paraffin and carbon, over a scraper which distributes the coating evenly and removes the excess, and around two cooling rolls through which circulates cold water. Thin sheet metal "blanking" strips are provided on the carbonizing roll to form clear strips on which to print or write. The machine is driven from and at the same speed as the printing and folding machines.—A. P.-C.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

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THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

Overhead During Low-Volume Production*

By A. F. Stock and J. M. Coffey, Lybrand, Ross Bros. & Montgomery, New York City.

It is generally considered that the conditions prevailing in many industries will cause manufacturers to operate considerably below their customary capacity during the next few years. The increased factory facilities acquired during the war period, and the slackened demand of the European trade have given rise to a situation which merits very careful study.

Cost accounting must consider and stress the selling viewpoint because it is evident that if this over-supply of factory equipment is to be utilized and its plants are to operate somewhere near normal, customer buying must be stimulated effectively. This stimulation may take the form of new products appealing to the public, or it may mean the production of greater quantities of the same product at reduced and more attractive prices. When the selling price meets the consumer's viewpoint of value at a given moment, it cannot help but stimulate sales. Future business will never be forthcoming to make use of idle equipment unless sales prices anticipate future costs. During low volume conditions, the sales department wants lower prices. Costs for estimating purposes therefore, cannot be based on present actual conditions, but must anticipate the future conditions, in order to attract new business.

Increasing Sales Volume

This article is written to bring out the factors that should be considered in aidnig the selling division to increase the sales volume. The basis suggested is not "a cure-all." Obviously, no basis will work during the low ebb of industry when depression exists and when the laws of supply and demand preclude sales at any reasonable price.

It is certain, however, that under present conditions lower prices have stimulated buying. No one can measure the amount of business that is lost to industry at this time because prices are not attractive to the consumer. There are articles (not articles of necessity) which consumers would buy if prices were low enough. The real problem is to determine how far costs can be reduced in this effort to obtain a sufficient volume of business.

Cost accounting should provide the sales executive with information showing how costs will vary with increases in the sales volume. The selling department problem is to reduce prices sufficiently to attract volume necessary to operate the factory upon an economical basis. The selling branch relies upon the cost department for estimates of the costs of probable future orders. The cost accountant is continually facing the question "how much will ten thousand articles, X-100, cost in the future if we land the order?" This means a studied revision of factory expenses with the future conditions in mind. The cost accountant must necessarily consider the volume factor and he must reconstruct his actual cost figures so as to provide the selling division with sound estimates. The cost accountant must know his actual costs thoroughly and he must exercise keen and far-sighted judgment in ascertaining the effect of increases in production upon such costs.

The cost accountant should continue his normal overhead rates all through his inventory valuations and in his provision for profit and loss and balance sheet purposes. The suggested overhead calculations referred to hereinafter, are purely statistical. They are not tied in with the books. They are designed principally to aid the selling division in fixing prices for desired quantities.

Some Pertinent Suggestions

It is with the above general conditions in mind and based on some of their experiences of the last few years, that the authors put forth the following suggestions in connection with handling this situation so far as it relates to cost accounting.

This article is written as a sequal to the topic presented in Official Publication No. 9 Volume 4, and gives more of the detailed departmental workings which go to make up the general situation discussed in the former publication. Official Publication No. 9, Volume 4, entitled "Prices, Profits and Production," issued January 15, 1923, gave the broad principles for the cost accountant to consider in attempting to attract a sufficient volume of business to reach what may be termed the "breaking line or point of profit." It should be stressed again that this is the correct general basis on which to obtain sufficient future business in any enterprise to bring it somewhere near its capacity point. This former discussion of the subject was rather general and somewhat brief, confining itself to broad underlying principles. It could not be applied in full to a plant having numerous departments and manufacturing a great variety of products. Such coditions demand a separate study of each department because each department's fixed expense is related to the products going through it.

An Accepted Principle

It is assumed for the purpose of this article that the policy of distributing factory overhead by departments is very well defined and established. There are few cost accountants today who do not accept this principle as standard practice. It is also generally established that departmental overhead rates, whether they be machine hour rates, labor hour rates or percentage on labor dollars, are nearly all based on normal operating conditions. However, there

*From National Association of Cost Accountants Bulletin.

is no accepted formula for determining normal operating conditions. The authors have found in their recent experiences that few cost accountants agree on the method or basis of establishing a normal operating capacity. Some consider normal as 85 or 90 per cent of theoretical capacity, while others reduce theoretical capacity to practical capacity by deducting allowances for special purpose machines, for workmen absent a certain percentage of their time, etc. This question of practical capacity versus theoretical capacity has been very ably presented in a former Official Publication, Volume No. 3, No. 19, issued July 1, 1922, entitled "Normal Burden Rates."

Defining the Normal Rate

Probably most cost men consider a normal rate simply an average of actual overhead. After all, there is a great deal to be said in favor of this definition. If a business for the past year or two years has operated profitably on a certain basis, this might well be considered a fair normal. The establishment of normal overhead rates by departments, however, presents a very difficult problem, which must be solved by each plant according to the conditions existing there.

The stablishment of some standard of predetermined departmental overhead is highly recommended for any type of industry. This is necessary: (1) to prevent unwarranted fluctuations in actual costs during periods of low or peak production, (2) to avoid the inflation of inventory values during periods of depression, and (3) to enable the quick compilation of a monthly profit and loss statement. It is assumed in this article that some standard basis of departmental burden calculation has been established whether it is called normal, standard, predetermined or by some simliar name. In addition to the calculation of normal overhead and the showing in each month's profit and loss statement of an over or under-absorbed overhead, and in addition to the overhead used on the costing of orders, it is suggested that, in order to aid the selling division, the cost accountant set up certain memorandum statistics based on the *actual departmental overhead*. Assuming, of course, that the actual overhead expenses are as low as currently possible, it is the present condition which the sales department is striving to better.

An Exhibit

The exhibit given below illustrates how the actual burden cost for a three-month period in some department of a typical manufacturing plant may serve as a basis for estimates of future costs under improved production conditions. The usual indirect labor maintenance and repair, and supply items are shown and also the relative portions of such expenses as power, insurance, taxes, depreciation and general factory expense. With the actual burden condition as a basis for the quarter period an attempt to estimate the future on various bases should be made. In the case illustrated, an increase in volume of 25 per cent has been assumed and the direct labor hours which have been used as the basis for measuring the overhead costs have been increased accordingly. In other words, the question of whether this department is operating at a greater or less volume would be answered by the number of workmen and the hours they apply.

DEPARTMENT 1 BURDEN COST ACCOUNT

Standing Order No.	Description		Increase 25%	Increase 50%
	Labor			
1-1	Foremen and Assistants	1,200	1,200	1,200
1-2	Clerical Expense	450	450	450
1-3	Inspection	550	600	630
1-4	Idle Time	150	200	240
1-5	Work a/c Shop Error	250	300	340
1-6	Trucking	420	530	600
1-7	Sick and Accident Exp.	200	250	300
1-8	General Labor	225	275	325
	Total	3,445	3,805	4,085
	Maintenance			
1-15	Building	500	540	560
1-16	Machinery	1,200	1,300	1,350
1-17	Fixtures	125	135	145
1-18	Tools	2,100	2,400	2,500
1-19	Electrical Apparatus	400	420	440
1-20	Pipe and Power Lines	300	320	340
1-21	Other Equipment	350	370	390
	Total	4,975	5,485	5,725
	Supplies			
1-30	Oils and Waste	40	45	55
1-31	Emery Wheels	60	70	80
1-32	Small Tools	70	85	95
1-33	Miscellaneous	60	70	80
	Total	230	270	310
	Apportioned			
	Proportion of: Power Expense	2,310	2,440	2,480
	General Expense*	2,780	3,475	4,170
	Insurance	800	800	800
	Taxes	700	700	700
	Depreciation	2,800	2,800	2,800
	Total	9,390	10,215	10,950
	Total Burden	18,040	19,775	21,070
	No. Direct Labor Hours	13,900	17,375	20,850
	Actual Rate Per Hour	1.30	1.13	1.02

*At standard rate of 20c per hour.

The cost accountant should attempt to estimate the conditions that will exist in the future if the deparment experiences a 25 per cent increase in volume. He should examine in detail each and every item of the departmental burden, and develop a new burden rate on the assumed future condition. For example, the foremen and clerical expense would remain constant regardless of this increase of 25 per cent. The inspection expense would increase but not directly in proportion to the increase in volume. It might increase 10 per cent with a 25 per cent greater volume. Each item of overhead must be studied from their viewpoint, and the reconstructed burden should be divided by the increased number of direct labor hours.

Methods of Calculation

It will be noticed that while the actual burden for the quarter ending March 31, shown upon the accompanying exhibit, was $18,040, the recalculated burden on the basis of a 25 per cent increase in output was $19,775. In the former case the burden was divided by the actual number of direct labor hours and a resulting burden rate of $1.30 per hour obtained. Upon the new estimated basis the burden of $19,775 was divided by the increased number of hours, and the resulting burden rate was found to be $1.13 per hour. A similar calculation, on the basis of a 50 per cent increase in volume over the existing actual volume, results in a burden rate of $1.02 per labor hour. This exhibit merely illustrates the typical statistical data needed properly to forecast departmental overhead rates on a basis of greater output. This plan may be used with equal effectiveness to indicate the results accruing from an increase of output amounting to 10 per cent, 30 per cent, 45 per cent, or even 60 per cent or 75 per cent over present actual production schedules. This entire calculation must be based on *present actual* conditions. It should assume no normal point. Future operating plans should be made on actual experience. The projection of the actual into the future gives the cost man a clear conception of the probable results under improved conditions. In other words, if the selling department is expected to bring in a 25 per cent increase in volume, then the cost figures should reflect the departmental overhead based on that 25 per cent increase and each cost estimated should receive the

benefit that is to be derived from the estimated increased production. The effect of this increase should be projected into the cost figures used in the estimate and sales prices should be computed in accordance therewith.

Of course, it is conceded that where the present actual operations are far below a reasonable normal this plan will be of little or no value. Burden rate obtained by calculating at 25 per cent increase would be useless. Under such conditions price cutting has gone so far that the prevailing prices bear practically no relation to actual manufacturing costs, as there is an almost entire lack of demand for the product.

Percentages to Be Considered

It should be understood that the basis of calculation proposed merely acts as an aid to the cost accountant in judging the effect of increased sales upon profits. In this connection he should consider normal, actual, maximum and estimates percentages. Normal and actual overhead rates are insufficient in themselves, but with these in mind and with the indicated reductions in departmental rates before him for increases in volume of 10 per cent, 25 per cent, 50 per cent, 60 per cent, respectively, the cost accountant will be in a strong position to give sound opinions upon future operating conditions. No one in the entire operating organization should be better fitted to predict future manufacturing costs and profits.

There is nothing more important than the policy of getting enough business to fill up the plant. Opportunity certainly exists today for the cost accountant to be a real and important factor in the establishment of executive policies which will accomplish beneficial results.

It should be remembered that this calculation should be made for each and every department burden account, as the articles of one department will not go through another. If the departmental basis of burden is justified then it automatically justifies the recalculation of the departmental burden on the basis of predicted increases in volume. These statistical statements by departments will aid in determining whether this increase at lower selling prices will bring more total profits than would actual conditions.

Furthermore an extension of these statements, so as to picture the effect of a sweeping general reduction in selling prices upon a whole industry, serves a very important use. It may be found that prevailing unit price levels could be lowered if by such action sufficient additional volume appeared obtainable to produce a satisfactory profit.

The authors have noted that in most of the industries where an attempt was made to recalculate on the buture basis, it was found that the burden generally averaged 75 per cent fixed expense and 25 per cent variable, and the variable was in direct proportion to the increase in sales or anticipated volume. Expressed otherwise, this means that of the total present actual expenses, about 75 per cent will remain fairly constant and 25 per cent will go up, in direct proportion to the sales. These ratios are given merely to make the matter somewhat concrete. They are not presumed to be generally applicable.

Distributing Factory Expense

The preparation of cost statistics upon possible future conditions involves a careful study of the distribution of general manufacturing expense. Under the most common practice, general manufacturing expense is distributed to producing department overhead accounts on the basis of either the total direct labor hours or the total of the direct and indirect labor hours. Of the two plans the latter is preferred because most items of general factory expense apply equally to indirect and direct workers. It is frequently found also that for ease of accounting, certain work may be classed as indirect and, therefore, this work, under the direct labor hours method, fails to receive its proper share of the general manufacturing expense.

Conceding that under normal and well balanced operating conditions, general manufacturing expense may be accurately distributed on the basis of total labor hours there still remains the problem of its distribution during periods of subnormal and unbalanced production. The total of such expenses holds fairly constant regardless of the relative activities of the various departments and the distribution of the actual general expense to departments on the total labor hours basis seems unsatisfactory where all departments are not equally busy. The departments with normal or abnormal volumes of work are charged with a disproportionate part of the general factory expense, the costs are distorted, and the comparative value of departmental overhead statements is lost. Referring to the Exhibit illustrating the actual burden and the burden recalculated on the new volume basis, it will be seen that the apportionment of general factory expense is made on a standard basis. In other words, if the general factory or general manufacturing expense statement could be visualized, this statement would show an over- or under-absorbed general factory expense which would not be settled on the operating departments. This feature is a very important one and if intelligent judgment is to be exercised in connection with future operating costs, the question of proper distribution of general expense must be given serious thought.

One Method Explained

A method of distributing general manufacturing expense on a standard basis is explained and illustrated below. In most industrial concerns general manufacturing expenses are high. Sometimes they equal or exceed the total of all the other burden charges. They usually include such items as factory executive salaries, factory clerical help—i.e., general help not applicable to definite departments—miscellaneous maintenance charges for the grounds and general buildings, shipping expense, expenses of the cost departments, production departments, purchasing departments, the general items of taxes and fire insurance, and so forth. Very few factories ever operate for any great length of time at full capacity in all departments. Under present day conditions it is exceptional to find a factory without some departments operating at greatly reduced capacity. However, it is usually necessary to maintain a skeleton organization in each department as there is some productive work being done in all departments. Where such conditions prevail, it is unfair to distribute the entire amount of general manufacturing expense upon the basis of total labor hours because the department operating at normal capacity will be charged with an excessive proportion. The department operating at a greatly reduced rate will be charged with only a very small share and one far below a normal charge. The burden rates of the busy departments will be greatly increased when as a matter of fact such departments should be receiving the benefit of a relatively low rate because of their high operating performances.

It is therefore advocated, that general manufacturing expense be distributed upon the basis of a standard charge per hour or dollar of total pay roll based upon a normal capacity throughout the plant. This means it is necessary to determine both the normal pay roll, or working hours, for the entire plant and the total normal general manufacturing expense under normal operating conditions. Dividing one by the other gives a standard charge which will absorb general manufacturing expense under normal conditions. In one large factory this procedure resulted in a charge of 20 cents on each dollar of total pay roll in order to cover the normal charge for general manufacturing expense. In another case this charge was 40 cents on each dollar of total pay roll. The charge, in some cases, can be applied on an hourly rather than a dollar basis.

The distribution of general manufacturing expenses upon a standard basis naturally means that there will be an unabsorbed balance of this expense when the factory is operating below capacity for the very reason that general manufacturing expense is largely made up of fixed charges. This unabsorbed or over-absorbed balance, of course, becomes a part of the total unabsorbed or over-absorbed amount for the whole plant.

A separate burden statement should be provided for general

manufacturing expense showing all the analytical details. Below the total of this statement or schedule should be shown the distribution of this expense on a standard basis. The balance over or under-absorbed should then be indicated at the bottom of the page.

The following example is given to illustrate the results of this method of distribution. There is shown the burden statement with the distribution of general manufacturing expense on a standard basis and, in a parallel column is shown a distribution where the entire amount of general manufacturing expense is absorbed. Under the advocated method of distribution the unabsorbed balances appear where they belong and furnish a real guide for managerial purposes. It is only fair that the departmental heads should not be penalized for something beyond their control.

An Example in Point

THE PROBLEM: The actual General Manufacturing Expense in a certain plant is $10,000 per month, the amount remaining constant even when part of the plant operates below normal.

The normal pay roll of all producing departments is $40,000, thus giving 25c per $1 of payroll as the normal rate for distributing General Manufacturing Expense to producing departments.

At a given time, the payroll of the four producing departments is:

Department 1	$4,000	
Department 2	2,000	
Department 3	9,000	
Department 4	5,000	$20,000

Payroll of Department 3 is stated to be normal although the plant as a whole is operating only 50 per cent of normal.

Show the difference in application to the product:

A—When the rate is based on total actual payroll.

B—When it is based on normal payroll—i.e., when it is applied as a stated per cent of each dollar of payroll.

Solution—

	Payroll	Case "A" Burden	Case "B" Burden
Dept. 1	$4,000	$2,000	$1,000
Dept. 2	2,000	1,000	500
Dept. 3	9,000	4,500	2,250
Dept. 4	5,000	2,500	1,250
Totals	$20,000	$10,000	$5,000

COMMENT—In Case A, Department 3 gets $4,500.00 as its portion of "General Manufacturing Expense," yet that Department is operating on a normal basis. This is an unfair distribution. In Case B, Department burdens are not distorted, and the "General Manufacturing Expense," shows an unabsorbed balance of $5,000. This is the true condition, because if all departments were operating at normal capacity all the expense would have been absorbed.

Low Volume Operating Conditions

To sum up, probably all cost accountants thoroughly realize the seriousness of present-day low volume operating conditions. Normal overhead rates—or in some cases somewhere between actual and normal—are probably being used in making estimates. This paper proposes a proper and equitable distribution of general factory overhead and suggests a basis for quoting prices that will make a satisfactory market for the company's product. It was this main idea which the authors have had in mind.

Chance for Chemical Engineers to Brush Up

Chemical engineers who have been out of college for some years and who feel the need to brush-up on their fundamentals of chemical engineering methods, will be given the desired opportunity this year at the Chemical Exposition which will be held September 28th to October 3rd at the Grand Central Palace, New York. A special course in chemical engineering which will be given in conjunction with the Exposition, will be divided into two groups, Section One for college students, and Section Two for advanced students, graduate students, and engineers of industry who are desirous of reviewing their work. Lectures will be given by leading authorities in the various fields and will cover fundamentals and advanced work in engineering. Prof. W. T. Read of Yale University will have charge of the complete courses.

Lectures will be held in the Grand Central Palace and tours of the Exposition for demonstrations will be conducted after the lectures. Entries for the course should be filed with the management, Chemical Exposition, Room 1102, Grand Central Palace, New York. The course is without charge.

Cost Convention Program

A program of more than usual interest has been arranged for the convention of the Cost Association of the Paper Industry which is to be held at the Hotel Manchester, Middletown, Ohio, on Thursday, Friday and Saturday, May 21, 22 and 23. A large number of reservations have already been received which assure a large attendance.

The complete program of meetings will be as follows:

THURSDAY MORNING SESSION

9:00-10:00 A. M. Registration

10:00 A. M. Opening Address by President John E. Hyde.

10:30 A. M. "Appraisals and The Profit and Loss Statement." Address by H. G. Baldwin, American Appraisal Company, Detroit, Mich.

AFTERNOON SESSION

2:00 P. M. "Excess Machine Capacity in the Paper Industry." Address by M. C. Dobrow, Assistant Secretary, Writing, Cover and Tissue Manufacturers' Associations.

3:00 P. M. "How to Handle Burden in Paper Mill Costs." Address by L. P. Corey, Scovell, Wellington & Co., (Chicago Office).

EVENING—DINNER

Speakers: Dr. E. O. Merchant, Statistician, Mead Pulp and Paper Co., Dayton, Ohio.

"Business Forecasting"—Using charts to illustrate his address, Dr. Merchant will explain the methods used in making business forecasts by means of the collection and analysis of business statistics.

FRIDAY—MORNING SESSION

9:30 A. M. Vance P. Edwardes, Forest Products Laboratory, Madison, Wis.
"White Water Losses and their bearing on Paper Costs."

10:30 A. M. H. S. Taylor, Member American Society C. E.
"The Valuation of Water Power Rights."

11:00 A. M. R. D. Baron, Secretary, Wisconsin Local Division.
"How the Wisconsin Mills are comparing Steam Costs."

AFTERNOON SESSION

2:00 P. M. Thomas J. Burke, C. A.
"Balance Sheet Ratios."

BUSINESS SESSION

3:00 P. M. Group Costs.
New Members.
Next Convention.
Open Forum.

SATURDAY

Arrangements have been made for visiting the local mills, including the Champion Coated Paper Company, The Beckett Paper Company, W. B. Oglesby Paper Company, Paul A. Sorg Paper Company, etc.

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Paper Men Interested in Hudson River Regulation

[FROM OUR REGULAR CORRESPONDENT.]

ALBANY, N. Y., May 11, 1925.—Representatives of a number of important paper manufacturing concerns were in attendance at a meeting of the Hudson River Regulating Board to discuss plans for the inauguration of work on the Conklingville reservoir as a step in regulating the waters of the Hudson river. The recently announced apportionment of the costs of the project, estimated at $9,000,000, was discussed by spokesmen for several firms which have been assessed a share of the costs.

Attorney T. M. Daly, of New York City, counsel for the Union Bag and Paper Corporation, protested against the apportionment of costs which he declared was not equal. The Union Bag Company & Paper Corporation is assessed about $1,300,000 of the total costs. The company was given ten days to file briefs. Involved in this situation, it was announced at the commission, are private negotiations between the Union Bag and Paper Corporation and the Adirondack Power and Light Company and a third company over water power holdings and a proposal to consolidate them.

Attorney James Todd, of Chicago, representing the United Paperboard Company, of Thomson, filed an objection on the ground that the Iroquois Pulp and Paper Company, also of Thomson, was not assessed as heavily as the United Paperboard Company, which will be called upon to pay about $118,000 of the cost of the work.

Within the next month or six weeks the Hudson River Regulating District Board will rule on these complaints. If the companies that complained are dissatisfied, under the law they are entitled to institute certiorari proceedings to obtain a review, in the courts, of the action by the board. E. H. Sargent, chief engineer of the board, forecasts that these objections will be readily settled by June 1. Mr. Sargent, who made the assessments, said that in that event the sales of bonds would probably be effected in ten days. The first bond issue will probably be $3,000,000 and will be followed by others from time to time.

Among those attending the meeting were George Ostrander, representing Finch, Pruyn & Co., Glens Falls; Frank L. Bell, of Glens Falls, and Chester Colson, of New York City, representing the International Paper Company; Thomas A. Ray, Edwin B. Murray, and John Morgan, representing the Union Bag and Paper Corporation; T. H. Sterling and George E. Nelson, of Mechanicville, representing the West Virginia Pulp and Paper Company.

To Make Kindergarten Papers

KALAMAZOO, Mich., May 11, 1925.—Another industry, auxiliary to the manufacture of paper, is to invade Kalamazoo and promises to be an important and interesting addition to the concerns operating here.

Louis P. Simon, secretary and manager of the Bermingham-Prosser Company, announces that his concern will engage in the manufacture of colored kindergarten papers, fancy box papers and fancy tops, both plain and embossed and in range of colors from the brightest hues to the softest tints.

The new industry will be established in the north building of the Fuller and Sons Manufacturing Company, North Pitcher street. Lease has been taken of the second floor of that structure, which is considered one of the finest factory structures in Michigan and splendidly adapted to turning out high grade products.

The plant acquired for Kalamazoo was previously operated in Holyoke, Mass., under the management of James H. Armstrong, an expert in his line and who comes to Kalamazoo to take charge of the industry here.

Machinery, especially built for this type of manufacture has been ordered, very little of the old machinery used at Holyoke being available for the business here. The process provides for the passage of the raw stock through a color vat then over a set of dryers. The coloring process is applicable equally to dull finished, coated or enamelled papers. It provides by scientific methods the use of accurate and correct colors. The range of shades numbers about 70. Aniline dyes of the highest grades are used in the manufacture of colors. There are also special machines for embossing papers. These papers, all grades, weights and colors, will be prepared for shipment in sheets and rolls.

"We expect to be operating our new department in 30 or 60 days," said Mr. Simon. "We were fortunate in closing a satisfactory lease for the Fuller building. That gives us 11,000 square feet of the finest factory floor space in the city. It is also very close to our general office, another convenience that will be appreciated. We do not intend to start on a big scale, using from 15 to 20 employes at the outset."

Important Chicago Business Change

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 11, 1925.—Announcement has been made that A. G. Stewart, formerly president of the A. G. Stewart Paper Company, 320 N. La Salle street, has become associated with the Schwarz Paper Company, 1400-36 S. Canal street, and has been elected a vice-president of that company.

The A. G. Stewart Paper Company has dissolved and the name, records, good will and merchandise have been purchased by the Schwarz Paper Company.

Mr. Stewart has been active in the Chicago trade for the past thirty years. He has long been known as the premier coarse paper salesman of Chicago. Mr. Stewart has hosts of friends among the mill executives and representatives who wish him success and prosperity in his now association.

With the sales force of the Stewart Paper Company added to its own large force, the Schwarz Paper Company becomes the largest house in its field.

New Financing for Minnesota & Ontario

New financing has been arranged for the Minnesotea and Ontario Pulp and Paper Company through the sale, announced Tuesday, of $16,000,000 first mortgage 6 per cent sinking fund gold bonds to Halsey, Stpart & Co., Inc., and the Minnesota Loan and Trust Company. This is believed to be the largest single issue of bonds yet brought out for the development of the pulp and paper industry.

The Minnesota Paper Company operates mills at International Falls, Minn., and Fort Frances and Kenora, Ontario. It ranks among the large manufacturers. Upon completion of additions now under way and provided for in this financing, the company states that it and its subsidiaries will have an annual capacity of 200,000 tons of news print, 30,000 tons of sulphate or Kraft pulp, 60,000,000 feet of "Insulite" and over 125,000,000 feet of rough and finished lumber, box shooks and crating. The company also will add 45,000 horsepower to its hydroelectric facilities, the present capacity of which is over 40,000. It is also building a supplementary steam station of 7,000 horsepower.

Cost Accountants and Engineers

A meetng of Cost Accountants and Engineers will be held at the Wisconsin Hotel, Milwaukee, on May 20, the place and time having been set to coincide with the Spring meeting of the American Society of Mechanical Engineers.

An interesting program has been arranged. M. Greenberg of the Bailey Meter Company will speak on "Installing and Checking Various Types of Flow Meters" and H. D. Fisher, chief engineer of the New Haven Paper and Board Company, on "Special Methods of Checking Flow Meters."

H. D. Savoy, vice president of the Combustion Engineering Corporation, will speak on "Stokers vs. Pulverized Fuel and Comparative Cost of Installation and Operation."

After the meeting a visit will be paid to the Lakeside plant of the Milwaukee Light and Power Company.

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Paper Manufacturers who carefully check manufacturing costs, and also strive to produce more and better paper at a lower cost per ton, prefer the unvarying quality and long service of ORR felts. A trial of them will bring about a preference that will be lasting.

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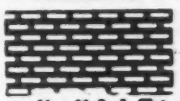

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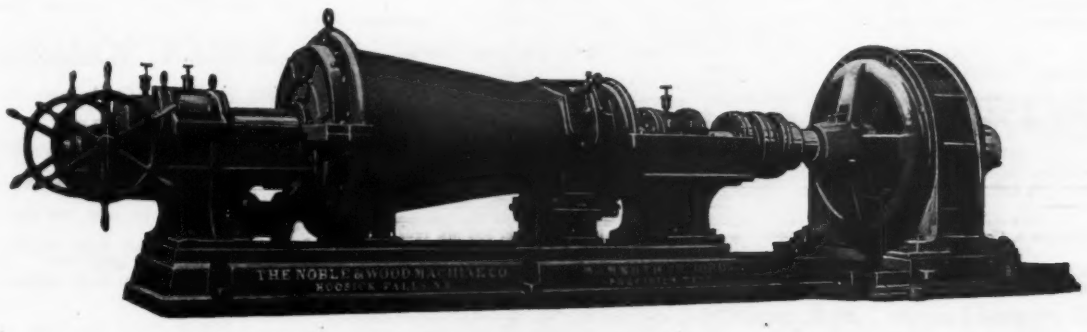

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WEEK ENDING MAY 9, 1925

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Printing paper.....50 cs.
Paper hangings.....11 bls.
Wall paper.....23 cs.
Cigarette paper.....174 cs.
Packing paper.....60 bls.
Baryta coated paper.....180 cs.
Colored paper.....1 cs.
Drawing paper.....31 cs.
Filter paper.....145 bls., 112 cs.
Silk paper.....9 cs.
Gelatine paper.....1 cs.
Fancy paper.....1 cs.
Tissue paper.....50 cs.
Decalcomania paper.....24 cs.
Transfer paper.....4 cs.
Litho paper.....25 cs.
Paper hand grips.....6 bls.
Paper tubes.....5 cs.
Strawboard .....116 rolls.
Miscellaneous paper.....59 cs., 278 rolls.

CIGARETTE PAPER

P. J. Schweitzer, Pr. Garfield, Marseilles, 112 cs.
The Surbrug Co., Olympic Havre, 25 cs.
Standard Products Corp., Olen, Havre, 20 cs.
Liggett & Myers Tobacco Co., by same, 17 cs.

WALL PAPER

W. H. S. Lloyd & Co., Samaria, Liverpool, 23 crates.

PAPER HANGINGS

W. H. S. Lloyd & Co., Samaria, Liverpool, 11 bls.

PRINTING PAPER

Oxford University Press, Samaria, Liverpool, 8 cs.
B. F. Drakenfeld & Co., by same, 21 cs.
The Booregaard Co., Hellig Olav, Oslo, 21 cs.

WRAPPING PAPER

S. S. Alcorn, Tomalva, Antwerp, 52 bls.

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Special Products Import Co., Eastern Victor, Rotterdam, 60 bls.

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J. Manheimer, Olympic, Bordeaux, 145 bls.
E. Fougera & Co., by same, 112 cs.

GELATINE PAPER

M. J. Corbett & Co., Geo. Washington, Bremen, 1 cs.

SILK PAPER

S. Gilbert, Volendam, Rotterdam, 9 cs.

FANCY PAPER

Whiting & Patterson Co., Olympic, London, 1 cs.

DRAWING PAPER

Kolesch & Co., Mauretania, Southampton, 2 cs.
Titan Shipping Co., by same, Havre, 25 cs.
Titan Shipping Co., Olympic, Paris, 4 cs.

COLORED PAPER

L. Sondheimer & Co., Mauretania, Southampton, 1 cs.

TISSUE PAPER

F. C. Strype, Samaria, Liverpool, 22 cs.
Meadows, Wye & Co., by same, 10 cs.
Standard Products Corp., Olympic, Paris, 18 cs.

BARYTA COATED PAPER

Globe Shipping Co., Republic, Bremen, 50 cs.
Globe Shipping Co., Geo. Washington, Bremen, 51 cs.
F. Henjes, Jr., by same, 79 cs.

DECALCOMANIA PAPER

Phoenix Shipping Co., Republic, Bremen, 11 cs.
L. A. Consmiller, Geo. Washington, Bremen, 13 cs.

TRANSFER PAPER

Sinclair & Valentine Co., Geo. Washington, Bremen, 4 cs.

LITHO PAPER

Martin & Bechtold, Pres. Garfield, Canton, 25 cs.

PAPER HAND GRIPS

A. C. Dodman, Jr., Inc., Samaria, Liverpool, 6 bls.

PAPER TUBES

H. de Maquin & Co., France, Havre, 5 cs.

STRAWBOARD

A. Vuyck, Volendam, Rotterdam, 116 rolls.

PAPER

C. Grimmer & Son, France, Havre, 3 cs.
Guibout Freres, by same, 14 cs.
Japan Paper Co., by same, 8 cs.
Judson Freight Forwarding Co., by same, 3 cs.
Coenca, Morrisson Co., by same, 10 cs.
A. Flinn & Co., by same, 9 cs.
Bankograph Co., Valacia, London, 2 cs.
Drinhausen, Hollkott Paper Co., Idaho, Antwerp, 278 rolls.
Steiner Paper Corp., Volendam, Rotterdam, 10 cs.

RAGS, BAGGING, ETC.

E. J. Keller Co., Inc., Timavo, Algiers, 156 bls. rags.
Anglo South American Trust Co., by same, 113 bls. rags.
Ladenburg, Thalman & Co., by same, 77 bls. cotton waste.
Royal Manufacturing Co., by same, 54 bls. cotton waste.
Amsinck, Sonne & Co., Inc., Coeur d'Alene, Alexandria, 107 bls. rags.
Castle & Overton, Inc., by same, 10 bls. rags.
National Bank of Commerce, by same, 138 bls. rags.
T. D. Downing & Co., Samaria, Liverpool, 48 bls. paper stock.
Mechanics & Metals National Bank, Assyria, Glasgow, 71 bls. paper stock.
E. J. Keller Co., Inc., Hellig Olav, Copenhagen, 89 bls. rags.
E. J. Keller Co., Inc., by same, 419 bls. bagging.
Furness, Withy & Co., Jessmore, Belfast, 82 bls. paper stock.
The Stone Bros. Co., Inc., Canopic, Liverpool, 73 bls. rags.
Katzenstein & Keene, Inc., Eastern Victor, Rotterdam, 156 bls. rags.
E. J. Keller Co., Inc., by same, 708 bls. rags.
E. J. Keller Co., Inc., by same, 341 bls. bagging.
G. M. Graves Co., by same, 83 bls. bagging.
A. W. Fenton, Inc., by same, 332 bls. rags.
Castle & Overton, Inc., by same, 23 bls. rags.
Maurice O'Meara Co., Tomalva, Antwerp, 13 bls. cotton waste.
Albion Trading Co., by same, 5 bls. rags.
The Stone Bros. Co., Inc., by same, 165 bls. rags.
Whaling Waste Products Co., by same, 66 bls. rags.
W. Barnett & Sons, by same, 10 bls. rags.
E. J. Keller Co., Inc., by same, 152 bls. rags.
E. J. Keller Co., Inc., by same, 87 bls. bagging.
Castle & Overton, Inc., by same, 124 bls. bagging.
Royal Manufacturing Co., by same, 24 bls. thread waste.
Star Woolen Co., by same, 18 bls. rags.
Albion Trading Co., by same, 12 bls. rags.
The Stone Bros. Co., Inc., Valacia, London, 47 bls. rags.
E. J. Keller Co., Inc., Carlier, Antwerp, 67 bls. rags.
E. J. Keller Co., Inc., Deutschland, Hamburg, 188 bls. rags.
E. J. Keller Co., by same, 70 bls. bagging.
E. J. Keller Co., Inc., J. Luckenbach, Kobe, 400 bls. rags.
E. J. Keller Co., Inc., Panaman, Kobe, 200 bls. rags.
True & McClelland, Archimedes, Manchester, 25 bls. cotton waste.
Equitable Trust Co., by same, 86 bls. new cuttings.
Royal Manufacturing Co., by same, 51 bls. cotton waste.
E. Butterworth & Co., Inc., by same, 111 bls. bagging.
J. Cohen, Son & Co., by same, 33 bls. new cuttings.
National City Bank, by same, 136 bls. rags.
L. H. Abenheimer, by same, 187 bls. bagging.
National City Bank, by same, 22 bls. bagging.
National City Bank, by same, 85 bls. rags.
P. Berlowitz, Volendam, Rotterdam, 232 bls. rags.
The Stone Bros. Co., Inc., by same, 20 bls. rags.
W. Steck & Co., by same, 36 bls. rags.
A. W. Fenton, Inc., Boston Maru, Hamburg, 216 bls. rags.
Bankers Trust Co., London Mariner, London, 36 bls. rags.
National City Bank, by same, 225 bls. paper stock.
A. H. Searle & Co., by same, 2 bls. rags.
Castle & Overton, Inc., Olen, Dunkirk, 155 bls. rags.
W. Hughes & Co., by same, 41 bls. thread waste.
Chicago Sanitary Rug Co., by same, 154 bls. rags.
S. Schapiro & Sons, Olen, Havre, 207 bls. rags.
L. Rosenbaum, Inc., by same, 45 bls. rags.
L. H. Abenheimer, by same, 37 bls. rags.
P. Berlowitz, by same, 335 bls. rags.
R. Bishop Manfg. Co., Olen, Dunkirk, 114 bls. rags.

OLD ROPE

T. D. Downing & Co., Samaria, Liverpool, 28 bls.
Guaranty Trust Co., Assyria, Glasgow, 80 coils.
Brown Bros. & Co., Hellig Olav, Copenhagen, 66 coils.
Brown Bros. & Co., Volendam, Rotterdam, 66 coils.
Mechanics & Metals National Bank, London Mariner, London, 50 coils.
W. H. Cummings & Son, Olen, Havre, 54 coils.
Salomon Bros. & Co., by same, 97 coils.

MANILA HEMP ROPE

New York Cordage Co., Assyria, Glasgow, 44 coils.

MANILA ROPE

Disbrow Cordage Co., Pr. Garfield, Manila, 97 coils.
Republic Bag & Paper Co., by same, 407 coils.

WOOD PULP

J. Andersen & Co., Boston Maru, Hamburg, 1,925 bls., 385 tons, sulphite pulp.
Hartig Pulp Co., by same, 475 bls., 96 tons, wood pulp.
Buck, Kiaer & Co., by same, 400 bls., 61 tons, sulphite pulp.
International Acceptance Bank, Eastern Victor, Rotterdam, 711 bls. wood pulp.
International Acceptance Bank, Volendam, Rotterdam, 990 bls. wood pulp.

WOOD PULP BOARDS

Laverloef Trading Co., Geo. Washington, Bremen, 812 bls., 113 tons.

CASEIN

Atterbury Bros., Inc., Vauban, Buenos Aires, 417 bags.

PHILADELPHIA IMPORTS

WEEK ENDING MAY 9, 1925

Paper House of Penna., Hannover, Bremen, 36 rolls paper.
Keystone Blue Paper Co., Ikala, Hamburg, 4 cs. printing paper.
C. W. Williams, Davisian, Antwerp, 12 cs. paper.
W. V. Bowater Sons, London Mariner, London, 6 rolls news print.
Atlantic Paper Co., Savannah, Glasgow, 66 cs. paper.
E. H. Bailey & Co., by same, 62 cs. paper.
National City Bank, by same, 59 bls. rags.
International Acceptance Bank, by same, 34 bls. rags.

(*Continued on page 70*)

F. L. Smithe Machine Co., Inc.

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for making any style envelope, regular or special. Printed, stamped, embossed and tissue lined envelopes. Also die presses, tension machines, metal clasp machines, and all other machinery used in making envelopes.

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V. D. SIMONS

INDUSTRIAL ENGINEER

Pulp and Paper Mills, Hydro-Electric and Steam Power Plants, Electrification Paper Mill Properties.

39 S. LA SALLE ST., CHICAGO

Imports of Paper and Paper Stock

(*Continued from page 68*)

New York Trust Co., by same, 20 bls. rags.
Fidelity Trust Co., by same, 141 bls. rags.
Castle & Overton, Inc., Olen, Dunkirk, 129 bls. rags.
Congoleum, Nairn Co., by same, 60 bls. rags.
Castle & Overton, Inc., by same, Havre, 203 bls. bagging.
D. M. Hicks, by same, 79 bls. rags.
Penn Rag & Metal Co., by same, 360 bls. rags.
New York Trust Co., by same, 198 bls. rags.
Salomon Bros. & Co., by same, 349 bls. rags.
Castle & Overton, Inc., Tomalva, Antwerp, 41 bls. rags.
Guaranty Trust Co., by same, 56 bls. rags.
Baltimore Trust Co., by same, 252 bls. rags.
Maurice O'Meara Co., by same, 222 bls. rags.
Reis & Co., Eastern Victor, Rotterdam, 10 bls. thread waste.
Castle & Overton, Inc., by same, 106 bls. rags.
E. J. Keller Co., Inc., by same, 78 bls. rags.
D. I. Murphy, by same, 32 bls. rags.
Castle & Overton, Inc., Anaconda, Rotterdam, 268 bls. rags.
Brown Bros. & Co., by same, 24 bls. rags.
Philadelphia National Bank, Eastern Dawn, Antwerp, 50 bls. rags.
Market Street National Bank, by same, 57 bls. paper stock.
New York Trust Co., City of St. Joseph, Marseilles, 174 bls. rags.
L. Scher & Co., London Mariner, London, 101 bls. paper stock.
Equitable Trust Co., by same, 55 bls. waste paper.
Guaranty Trust Co., by same, 142 bls. paper stock.
National Bank of Commerce, by same, 181 bls. paper stock.
E. J. Keller Co., Inc., Ikala, Hamburg, 136 bls. rags.
Fidelity International Trust Co., by same, 93 bls. rags.
E. J. Keller Co., Inc., Davisian, Antwerp, 175 bls. rags.
International Acceptance Bank, New York City, Bristol, 114 bls. rags.
Brown Bros. & Co., London Mariner, London, 576 bls. rags.
New York Trust Co., New York City, Bristol, 35 coils old rope.
J. B. Moors & Co., London Mariner, London, 36 coils old rope.
Old Colony Trust Co., Savannah, Glasgow, 68 coils old rope.
Old Colony Trust Co., by same, 11 bls. old rope.
J. A. Steer & Co., by same, 54 coils old rope.
Jessup & Moore Paper Co., F. Taussig, St. Johns, N. B., 650 cords pulp wood.

BOSTON IMPORTS

WEEK ENDING MAY 9, 1925

H. J. Dowd & Co., Boston Maru, Hamburg, 24 rolls wrapping paper.
Maurice O'Meara Co., by same, 39 bls. rags.
E. J. Keller Co., Inc., Westerner, Rotterdam, 41 bls. rags.
Baring Bros. & Co., Ltd., Dorian, Manchester, 75 bls. rags.
Baring Bros. & Co., Ltd., by same, 35 bls. new cuttings.
T. D. Downing & Co., by same, 226 bls. new cuttings.
J. B. Moors & Co., by same, 252 bags hide cuttings.
First National Bank of Boston, by same, 50 bls. cotton waste.
F. Leyland & Co., by same, 21 bls. rags.
J. T. Lodge & Co., by same, 14 bls. rags.
Brown Bros. & Co., by same, 66 coils old rope.
Baring Bros. & Co., Ltd., by same, 137 coils old rope.
National City Bank, Pr. Garfield, Manila, 398 pgs. manila rope.
Castle & Overton, Inc., ——, Germany, 280 bls. wood pulp.
Ira L. Beebe & Co., Inc., Seattle Spirit, Hamburg, 1,175 bls., 235 tons, wood pulp.
Bulkley, Dunton & Co., Idefjord, Gefle, 1,250 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING MAY 9, 1925

Castle & Overton, Inc., Collegian, England, 194 lbs. paper stock.

BALTIMORE IMPORTS

WEEK ENDING MAY 9, 1925

E. J. Keller Co., Inc., Beemsterdyk, Mannheim, 237 bls. wood pulp.
Pagel, Horton & Co., Inc., Idefjord, Stockholm, 7,750 bls. wood pulp.
Bulkley, Dunton & Co., Idefjord, Gefle, 1,000 bls. wood pulp.
Hartig Pulp Co., by same, 1,550 bls. wood pulp.
A. F. Kelly & Co., Boston Maru, Hamburg, 666 bls., 100 tons, wood pulp.
Buck, Kiaer & Co., by same, 1,000 bls., 153 tons, wood pulp.
E. J. Keller Co., Inc., by same, 1,500 bls., 229 tons, wood pulp.
E. J. Keller Co., Inc., Hannover, Bremen, 300 bls. rags.

SAN FRANCISCO IMPORTS

WEEK ENDING MAY 9, 1925

Frazar & Co., Tak. Maru, Yokohama, 750 bls. rags.
Shoko Co., by same, 44 bls. rags.

Decision on Paper Stock Appeal

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 13, 1925.—The United States Board of Tax Appeals has rendered a decision in connection with an appeal of the Washington Paper Stock Company against a decision of the Commissioner of Internal Revenue. In this case the Board says:

"This is an appeal from a determination by the Commissioner proposing to assess an additional tax in the amount of $1,942.82, for the calendar years 1919 and 1920. The amount of tax in dispute is approximately $1,451.25. From the evidence presented at the hearing the Board makes the following findings of fact:—

"The taxpayer is a South Dakota corporation with its principal offices in Washington, D. C., and kept its books of account on the accrual basis. In filing its returns for the years 1919 and 1920 the taxpayer computed its depreciation upon the book value of its assets, using the declining balance as the base and a high rate of depreciation. The Commissioner disallowed the depreciation claimed and computed depreciation on the book value of the assets at normal rates. Cost was not considered in computing the depreciation deduction. In the year 1920 the taxpayer's plant was destroyed by fire, and the loss was not compensated for by insurance or otherwise. The loss was allowed by the Commissioner but he failed to restore to asset values depreciation disallowed to time of the fire.

"During the year 1920 there was credited on the books of the corporation to its two principal officers salaries in the amount of $17,580, each. At the close of the taxable year all this salary had been paid with the exception of $2,500 to each of them. In closing the books of the corporation for the year the amount of salaries unpaid was set up in a "to balance" account and has been included by the Commissioner as income of the corporation for that year.

"The determination of the Commissioner is disapproved in part. There should be allowed as a loss by fire not compensated for by insurance or otherwise in the year 1920, the amount of depreciation disallowed in 1919 and 1920; and the net income for 1920 should be reduced by $5,000 salaries payable to officers, erroneously included as income. The deficiency will be settled on consent or on seven days' notice under Rule 50."

German Paper Conditions

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., April 22, 1925.—Conditions in the paper industry in the Frankfort district of Germany have shown a slight improvement since the middle of April as far as sales are concerned, says a report to the Paper Division of the Department of Commerce. However the continued uncertainty regarding prices, which are advanced every few weeks, as well as the general tightness of the money market have affected business very noticeably. Most of the mills are well equipped, but deliveries are very slow and orders are not accepted by manufacturers at fixed prices. Sales are made at prices prevailing on date of delivery. Discussing the fine paper market the report continues:

"In view of the Easter trade, business in the Frankfort fine paper market has been good during the past four weeks. Wholesalers, however, are complaining of the difficulty of collecting accounts. Many of their customers, especially the small printing establishments are reported to be in financial straits in addition the wholesale trade is affected by the direct competition of the paper mills. Prices show fluctuations and in many cases are less than those fixed by the paper manufacturers' conventions as the necessity of having ready money for current expenses has occasioned the selling of old stock at prices below the domestic level regardless of the cost of replenishment."

SALE OF PAPER MILL STRAW BOARD AND BOX PLANT

Notice is hereby given that the undersigned, as Receivers of the American Paper Products Company, a corporation of St. Louis, Missouri, heretofore appointed in the case of St. Maurice Paper Co., Ltd., vs. American Paper Products Company, the same being Cause No. 3448, in the Rush Circuit Court, of Rush County, Indiana, will, on the 18th day of May, 1925, at the hour of one o'clock, P. M., and from day to day thereafter until sold, offer at private sale, the real estate, factory and equipment of said American Paper Products Company, located at the town of Carthage, Rush County, Indiana, more particularly described as follows, to-wit:

ALL REAL ESTATE

amounting in all to more than 25 acres together with all and singular the buildings and structures, machines and machinery, shafting, engines, boilers, pumps, dynamos, tools and fixtures and other appurtenances on the said real estate, and constituting the manufacturing plants of said Company thereon erected; and also all easements, rights of way, railroad tracks and switches, belonging to the Company and used in or in connection with said manufacturing plants, together with all rights, franchises and privileges appertaining thereto.

Said sale will take place at the office of said plant and on the premises at Carthage, Indiana.

Sealed bids will be received by the undersigned, up to the hour of one o'clock P. M. on said 18th day of May, 1925. Said sealed proposals are to be accompanied by certified check, cash, or bonds secured by first mortgage on said plant in a sum equal to ten per cent. of the bid; said deposit of money, bonds or certified check to be left with the undersigned, and to be forfeited in case the successful bidder fails to comply with any of the terms of said sale. Said sale will be for cash, and to the highest bidder, or upon such terms and conditions as the Court may approve.

By the order of the Court, authorizing such sale, said receivers are authorized to accept, in lieu of cash, first mortgage bonds of said Company, now existing against said plant.

Said premises may be inspected at any time by calling at the plant at Carthage, Indiana.

The plant has three machines with a capacity of approximately 100 tons of product per day. An abundant supply of water, at very low cost, is provided. A practically new box board factory is annexed to the plant. An ample supply of high voltage electric current, at a low rate, is supplied by the long distance lines of the Indiana Electric Corporation.

An amount equal to approximately $1,500,000.00 has been expended on the plant and equipment.

The plant is in good running order and has been operated at capacity until a very recent date.

An abundant supply of capable, well-trained labor has been available at the plant for a number of years.

A heavy supply of wheat and oats straw is produced in the territory immediately surrounding the plant.

Any inquiries about details concerning the plant or terms of sale will be promptly answered by mail upon request.

LEY P. REXFORD,
JOHN A. TITSWORTH,
Receivers.

Carthage, Indiana.

New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, May 13, 1925.

Taken as a whole the New York paper market is no better and no worse than it was a week ago. During the week it has maintained its equilibrium and that is about all that can be said regarding it. Here and there, perhaps, there have been slight betterments but such as they were have been offset by a falling off in demand in other directions so that the general tone of the market cannot be looked upon as improved. Since the slow times of last summer there has never been a time when buying could really be considered spontaneous or when buyers exhibited that freedom in their transactions which they show when times are really excellent. Now, as the hot weather period draws within range, the buying is more and more showing a tendency to get back into the same narrow hand-to-mouth channel which it occupied all through the summer of 1924. Reports as to general business conditions are still conflicting but continued efforts to put a roseate appearance to them are becoming less successful. Business is not today in its most energetic mood and the reason is still a mystery. When the suggestion was first made that the continued thrift talk of President Coolidge was hurting business there were many who laughed but today there are many who laughed who are asking themselves if there may not be some logic in the theory. Economy applied to politics and governmental management, all agree, is an advisable thing but too much thrift applied to business is bound to be disastrous to that superior business condition which everybody in business is praying for. The paper market is dependant upon too many extraneous influences to be accredited with any ailment of internal origin and the market is certain to pick up just as soon as the general business tone improves. It cannot hope to show much improvement until that condition arrives.

There has been no let-up in the incessant call for news print and there will probably be none until the vacation season sets in in earnest, forcing a cut down in the circulation of the big papers. However, it is believed that, in the metropolitan area at any rate, the vacation period will not cut the swath it usually does. The New York papers are now in a lively competition for circulation and advertising patronage. Prize contests are the craze of the day and for that reason the metropolitan paper may continue to devour news print at very nearly the present pace all summer.

The board business is reported as a trifle better than it has been. Tissues are not in the demand they should be while fine papers in general as well as coarse papers are having an under normal call.

Mechanical Pulp

Ground wood prices are holding firm and production and consumption continue to reach a fair mark. The manufacturers are still enjoying the best of working conditions and stock is being piled up to be drawn on when manufacturing conditions become less favorable. The board and news print mills are still buying generously and consistently.

Chemical Pulp

No. 1 kraft was the only item in the chemical pulp quotations to be changed during the past week, this going to a higher level. Buying is still slow but the week saw a slightly better tone in the market and there is hope of an immediate betterment.

Old Rope and Bagging

Old rope demand was reported as slightly improved the past week although the call is still slow, orders being small when they are placed and apparently based only on immediate needs. Prices are holding firm and will undoubtedly go higher in case of any great improvement in demand. Bagging underwent no change. The buying is very light now and greatly under the normal for this period of the year.

Rags

It really began to look the past week as though the rag market was on an upward turn. It has been having a rather slow time of it and the lack of trading activity has not been entirely explainable. Orders have for several weeks been very irregular and the marked routine of the market has not proved dependable. The week, however, has showed a slight awakening of interest, orders have multiplied and inquiries have been more generous. Prices are holding firm and the general market tone is much more encouraging than any time within a month or six weeks.

Waste Paper

Waste paper is still in a lagging mood. Many of the most constant buyers are resting on their oars and not sending any orders through or, at any rate, any orders that they are able to hold off. While stock is not coming in as heavily as it does at this time of the year ordinarily it is still coming in in such quantities that the available orders scarcely suffice to keep it moving. Slight price changes have been downward.

Twine

Twine is still enduring dull times. There seems to be little interest in the market just now and nothing to suggest that twine is scheduled for any immediate betterment worthy of mention.

Los Angeles Trade News

LOS ANGELES, Cal., May 11, 1925.—While business in both the fine and coarse paper markets has picked up considerably during the past week, principally because of steady prices, it has not improved to the point expected. Most of the large yearly contracts have been signed and what business remains is among the small jobbers. Salesmen report a general pick up in business around the smaller towns, indicating that business is generally good.

A war among jobbers on cotton twine began April 28. Jobbers are today offering it to the trade for re-sale at $39 a ton, despite the fact that the mills are asking $42. This is a drop of six cents a pound, the price quoted earlier in the week being $.45. Large supplies and a lack of business are the cause.

The Nelson Parr Paper Company is definitely out of the Los Angeles Paper Trade Association. Although efforts to keep them in were made, they stood by the resignation tendered some time ago.

Roberts, Otter and Nelson, the largest independent dealers in coarse papers in Los Angeles, move from their present location, 209 North Los Angeles street, May 15, to 330 East Market street. They will have about 8000 square feet in the new warehouse with 8000 additional in the event that they need it. They report business good.

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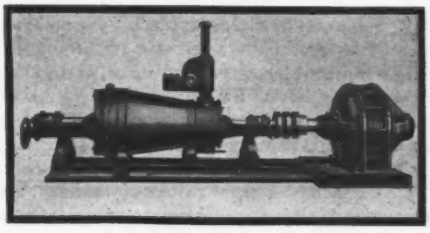
THE NEWS AND PRINT PAPER

Twenty-five million American families buy twenty-nine million newspapers a day. The newspaper is vital to the thought and action of the nation. A people without newspapers would be a people in the dark, suspicious, given over to rumor, hesitating in their trade, uncertain in their social life, ignorant of their neighbors. To have confidence in life men must know what other men are doing. The printed page tells them, paper makes it possible.

APPLETON paper and pulp machines are playing an important part in the manufacture of the nation's supply of paper.



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Appleton, Wisconsin

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
Wednesday, May 13, 1925.

The chemical market has now reached a drifting state with most of the commodities doing a modest routine business but with scarcely any of them exhibiting anything like alacrity. Contract tonnage is moving fairly well but spot buying is decidedly off and those who place orders in the market show little disposition to delve further into the future than they have already done. The past week has not changed the situation materially and what has occurred has neither tended to improve the tone of things nor to promote a more optimistic feeling on the part of the dealers. With May nearly half gone, the gap between the present and the hot weather period is rapidly closing up and there is only a short period left in which to hope for anything in the way of business stimulation. After that period is over the market is reconciled to the inevitable and it is feared by many that the dull summer season will find the market flatter than it was during the corresponding period of last year. In anticipation of that, steps are already being taken to ward off the disastrous effects as much as possible. An over-accumulation of stock is being guarded against and a curtailing of production has already been launched in certain directions. Prices are still remaining firm and up to now the manufacturers have pulled together well and extensive price cutting has not added its demoralizing influence to the market conditions. At this writing the outlook is none too encouraging and the manufacturers have little left them to pin their hopes to.

BLANC FIXE.—When the general condition of the chemical market is taken into consideration, blanc fixe may be considered as doing exceedingly well. The demand has been very good for a considerable period and it is holding up encouragingly in view of the business trend. The price remains right up where it has been for weeks, from $60 to $70 a ton being asked for the pulp and from $75 to $90 a ton for the powder.

BLEACHING POWDER.—Despite the fact that the demand for bleaching powder has been weakening, the dealers have thus far stood shoulder to shoulder and religiously held to the price. There is no price cutting as a matter of fact and buyers are fast learning that it is a useless waste of time to look for concessions. The price, however, is bound to drop within a short time unless the manufacturers decide on a material curtailment of the production. The price at this writing remains 1.90 cents a pound.

CAUSTIC SODA.—Caustic soda which a week ago showed a slight falling off in demand is going still further down the slide. Fortunately the market is not cluttered up with stock so that the dropping off is not yet having the marked effect it otherwise would. There is no disposition as yet to cut the price. The present quotation is from 3.10 to 3.15 cents a pound.

CASEIN.—Casein which has hardly been subjected to any change in a month passed another week of customary routine. The demand has been very good for the times and it remains so even now when things are letting up a trifle. It is selling at from 12 to 13 cents a pound.

CHINA CLAY.—China clay demand is fair but by no means as good as it was up to about the middle of March when it began to undergo something of a slump. It is predicted that the price will remain where it is for some time yet. The imported grades are now bringing from $16 to $20 a ton and the domestic grades from $12 to $15 a ton.

CHLORINE.—Although chlorine demand is not quite so strong as it was a couple of weeks ago it has not fallen off sufficiently to cause any real worry. The price is still fixed at from $4.50 to $7.00 a pound in tanks.

ROSIN.—Rosin was not quite as lively during the past week as it has been but it has been having an almost phenomenal demand for a long period and there is nothing amazing in the fact that it now sees a little let-up. There is nothing to indicate, however, that the slight falling off in demand is anything more than temporary and rosin may go right back into one of its best weeks next week. It is quoted at from $6.65 to $6.90 at the naval stores centers.

SALT CAKE.—Salt cake has had to fall back almost entirely upon its regular contract withdrawals and spot buying is at a minimum. The production is already being curtailed by some of the manufacturers and the market is without any stock accumulation. Apparently the manufacturers have decided to regulate their production closely by the demand and to prevent any surplus from accumulating. It is still selling at from $17 to $20 a ton.

SODA ASH.—Soda ash, which recently underwent a miniature sulmp, is still a little bit off in demand but the soda ash men are fairly well sold up for the balance of the year and are therefore "sitting pretty." It is quoted at 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—Sulphate of alumina is still on the sliding scale. Demand started to fall off a short time ago and is not yet showing any inclination to get back on its higher footing. Conditions are by no means alarming, however, and sulphate of alumina is having no new experience for this time of the year. The price on the commercial grades is from 1.40 to 1.45 cents a pound at the Eastern works and on the iron free is from 2.10 to 2.25 cents a pound.

SULPHUR.—Nothing in the way of off business disturbs sulphur. Buyers are taking out their regular contract withdrawals at stated intervals and the price is still from $18 to $19 a ton.

TALC.—Talc has suffered something of a reaction but it had long been doing wonderfully well and is still in an enviable position in spite of its falling off in demand. From $17 to $18 a ton is the price still being asked.

National Container Meeting

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 12, 1925.—The next meeting of the National Container Association is scheduled to be held at the French Lick Springs Hotel, French Lick, Indiana, next Tuesday and Wednesday.

Meetings of the Sales Promotion, Standardization and Statistical Committees will be held at 1:00 P. M. Monday. President Gaylord has called a meeting of the Executive Committee for 2:00 P. M. Monday.

An interesting report is expected from the Sales Promotion Committee. Further material progress is being made in concerting shippers to the use of corrugated and solid fiber boxes.

Chairman F. J. Kress will report for the Standardization Committee. As a result of the report submitted by this committee at the last meeting, and the action taken at that time, the carriers are being requested to make additions and amendments to existing specifications, which changes are considered to be in the best interest of the container manufacturers and their customers.

The report of the Statistical Committee will be submitted by Chairman Fletcher M. Durbin. There will also be a report from the Mellon Institute Committee. This committee recently held a meeting at the Mellon Institute, Pittsburgh, at which time a revised program of research activities, to be pursued at the Institute was adopted.

St. Lawrence Paper Co. Orders Ruths Accumulator

St. Lawrence Paper Company has ordered from Combustion Engineering Corporation, Ltd., a Ruths Steam Accumulator 39 feet 6 inches long, 12 feet diameter, total volume 4050 cubic feet, 150 pounds working pressure.

This will make a model installation in connection with the firm's present boiler house and it is particularly interesting to know that this is the first steam accumulator that has been installed in conjunction with a pulverized fuel fired boiler.

KVP

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This insures greater freedom from impurities and an exceedingly uniform product.

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Kalamazoo, Michigan

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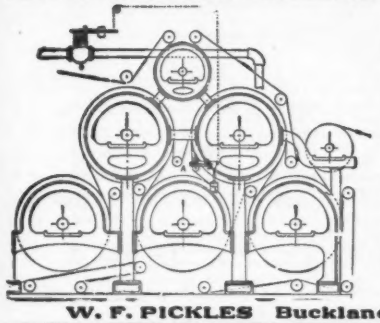

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Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Abitibi Power and Paper, Gen. 6s 1940	99	102*
Advance Bag and Paper, 7s 1943	98	100*
Aroostook Pulp and Paper, 6s 1925	99	...
Bastrop Pulp and Paper, 7½s 1932	104	108*
Brompton Pulp and Paper, 6s 1927	93	95
Beaver Board, 8s 1933	87	89
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Board, N. Y. Curb, 8s 1933	93	95
Beaver Products Corp., 7½s 1942	102	104
Belgo Canadian Paper, 6s 1943	99	100
Brown Paper Co., 8s 1931	102	105*
Berlin Mills, 5s 1931	99	...
Bryant Paper Co., 6s 1942	98	101
Brown Company Serial, 6s 1925-43	97	100
Central Paper, 6½s 1925-42	90	95
Cape Breton Pulp and Paper, 6s 1932	98	102
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	97	100*
Chicoutimi Pulp Co., 6s 1943	63	...
Donnaconna Paper Co., Ltd., 6s 1940	98	100
Eddy Paper, 7s 1931	96	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	84	88
Fox River Paper, 7s 1931	98	102
Fort Orange Paper Co, 7s 1942	95	99
Eddy Paper Co., 7½s 1931	94	98
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	98	...
Hercule Corp'n, 8s 1936	98	101
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	90	97
Kenmore Pulp and Paper Co., 6s 1937	89	...
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	103	105
Mengel Company, 7s 1934	100	103
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	101	103*
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	99	...
Parsons Pulp & Lumber 1st 7s 1928	95	...
Paterson Parchment Paper, 5½s 1927-28	98	100
Paterson Parchment, 6s 1938	97	99
Parker, Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., 6s 1943	99	101
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Series A, 8s 1940	111	113
Riordan Paper, 6s 1924	91	94
Riordan Pulp and Paper, Ltd., 6s, 1929	33	35
River Raisin Paper, 8s 1936	104	106
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	93	95
Smith (Howard) Paper Mills, 6s 1934	94	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	88	92
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
Whittaker Paper, 1st 7s 1942	95	...
Watab Paper Co., 6½s 1942	100	103*
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	87	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	65	67
Abitibi Power and Paper, Pfd	106	115*
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	70	75*
Beaver Board, Com	5	7
Beaver Board, Pfd	38	41
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Brompton Pulp and Paper, Cap	22	24
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	255	265
Howard Smith Paper Co., Com	22	23
Howard Smith Paper Co., Pfd	28	30
Jessup & Moore Paper, Pfd	74	76
International Paper Co., Com	57	58
International Paper Co., Pfd	77	78
Mengel Company, Com	45	47
Mengel Company, Pfd	82	...
Oxford Papers, Com	93	97
Oxford Paper Co., Pfd	98	...
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd	99	...
Price Brothers, Cap	38	39
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	82	85
St. Regis Paper Co., Cap	36	40
Smith (Howard) Paper Co., Ltd., Com	25	28
Smith (Howard) Paper Co., Ltd., Pfd	85	87
Spanish River Pulp and Paper, Com	105	107
Spanish River Pulp and Paper, Pfd	115	117
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper. Cap	44	47
West Virginia Pulp and Paper, Pfd	85	100
Whittaker Paper, Com	50	...
Whittaker Paper, Pfd	13	...

* Nominal

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—		
White No. 1	.70	@ .90
Colored	1.00	@ 2.00
White No. 2	.70	@ .80
Anti-Tarnish	1.25	@ 2.50
Kraft	.85	@ .95
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	4.50	@ 4.75
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.25	@ 9.50
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.00
Fibre Papers—		
No. 1 Fibre	5.50	@ 6.00
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.50	@ 2.75
S. Screening	3.00	@ 3.50
Card Middler	4.00	@ 5.00
Boards—per ton—		
News	47.50	@50.50
Straw	57.00	@60.00
Chip	50.00	@52.50
Binders' Boards	72.50	@77.50
Sgl. Mla. Lt. Chip	60.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	33.00	@37.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.25
No. 1 strong unbleached	2.75	@ 3.25
No. 2 strong unbleached	2.45	@ 2.80
No. 1 Kraft	2.95	@ 3.20
Sulphate—		
Bleached	3.75	@ 3.95

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.75	@ 4.50
Easy Bleaching Sulphite	2.90	@ 3.25
News Sulphite	2.45	@ 2.75
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	2.70	@ 3.25
Soda Bleached	4.00	@ 4.25

Domestic Rags

New Rags

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.50	@15.25
New White, No. 2	8.00	@10.00
Silesias No. 1	10.50	@11.50
New Unbleached	14.00	@15.00
Washables	6.50	@ 9.25
Fancy	975	@10.25
Blue Overall	10.25	@11.25
New Blue Prints	7.50	@ 8.50
New Soft Blacks	5.75	@ 6.20
Mixed Khaki Cuttings	5.75	@ 6.50
Pink Corset Cuttings	10.50	@11.00
Pink Muslin	10.25	@10.75
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	6.50	@ 7.50
Men's Corduroy	6.25	@ 6.75
New Mixed Blacks	4.00	@ 5.00

Old Rags

White, No. 1—		
Repacked	8.00	@ 9.00
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.75	@ 5.25
Miscellaneous	4.00	@ 4.50
St. Soiled, White	3.00	@ 3.50
Thirds and Blues—		
Repacked	4.00	@ 4.25
Miscellaneous	3.25	@ 3.50
Black Stockings	4.00	@ 4.50
Roofing Rags—		
Cloth Strippings	3.15	@ 3.25
No. 1	3.15	@ 3.25
No. 2	2.85	@ 3.05
No. 3	2.00	@ 2.25
No. 4	2.75	@ 2.85
No. 5A	1.80	@1.50

Foreign Rags

New Light Silesias	9.50	@10.50
Light Flanneletts	11.00	@12.00
Unbl'ched Cottons	14.00	@15.00
New White Cuttings	14.00	@15.00
New Light Oxfords	10.00	@11.00
New Light Prints	9.00	@10.00
New Mixed Cuttings	4.25	@ 4.75
New Dark Cuttings	3.75	@ 4.25
No. 1 White Linens	10.25	@11.25
No. 2 White Linens	7.50	@ 8.50
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.75
Ord. Light Prints	3.75	@ 425
Med. Light Prints	3.75	@ 4.25
Dutch Blue Cottons	4.00	@ 4.50
Ger. Blue Cottons	4.00	@ 4.25
Ger. Blue Linens	425	@ 4.75
Checks and Blues	3.50	@ 3.75
Linsay Garments	2.35	@ 2.45
Dark Cottons	2.25	@ 2.35
Shoppery	2.15	@ 2.25
French Blues	4.00	@ 4.50

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.10	@ 3.25
Domestic	3.15	@ 3.25
Wool Tares, light	2.60	@ 2.70
Wool, Tares, heavy	2.70	@ 2.80
Bright, Bagging	2.55	@ 2.65
Mixed Bagging	2.30	@ 2.40
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.60	@ 1.70
Manila Rope—		
Foreign	6.25	@ 6.75
Domestic	6.75	@ 7.25
New Bu. Cut	3.50	@ 4.00
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.50	@ 3.75
Hard, White, No. 2	3.15	@ 3.40
Soft, White, No. 1	2.90	@ 3.15
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag	1.45	@ 1.55
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.80	@ 1.90
Ledger Stock	1.60	@ 1.70
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.45	@ 2.60
New Cut. No. 1	1.75	@ 2.00
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	.70	@ .90
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.00	@ 2.10
News—		
No. 1 White News	1.90	@ 2.05
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.95	@ 1.05
No. 1 Mixed Paper	.65	@ .75
Common Paper	.45	@ .55

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.56	@ .61

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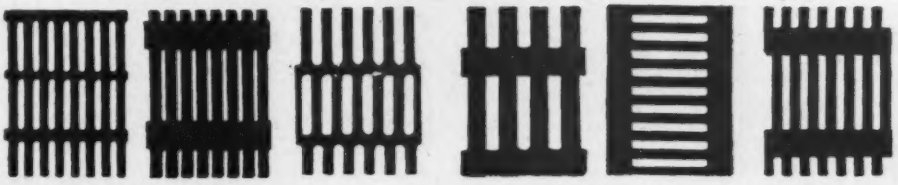

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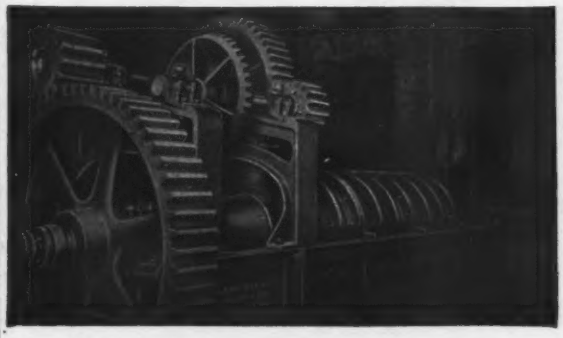

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ATHENS, WIS.

Finished Jute—			
Dark, 18 basis...	.30	@	.31
Light, 18 basis...	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.20	@	.23
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger.	.15	@	.17
Fine Tube Yarn—			
5-ply and larger.	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14	@	.15
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Amer. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1. Rag Bon..	25	@	35
No. 2 Rag Bond..	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond	7	@	10¼
Sulphite Ledger	9½	@	12
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5½	@	7½
No. 1 S. & S. C. Book	6¾	@	7¾
Coated Book	8	@	10
Coated Label	8	@	10
News—Roll, mill	3½	@	4¼
News—Sheets, mill.	3¾	@	4¼
No. 1 Manila	4½	@	5½
No. 1 Fibre	4½	@	5¾
No. 2 Manila	3¾	@	4¾
Butchers' Manila	4	@	4½
No. 1 Kraft	5¾	@	6¾
No. 2 Kraft	4.50	@	5.00
Wood Tag Boards	4¼	@	6
Sulphite Screenings	3.00	@	3.25
Manila Tissue, 24x36 sheet	7½	@	8
White Tissue, 20x30 sheet	7	@	7¼
Boards, per ton—			
(Delivered Central Territory)			
Plain Chip	45.00	@	47.50
Solid News	47.50	@	50.00
Manila Line Chip	57.50	@	60.00
Container Lined—			
(Delivered Central Territory)			
85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.15	@	3.25
White Envel. Cuttings	3.15	@	3.25
No. 1 Soft Shav.	2.65	@	2.75
No. 1 Mixed	1.45	@	1.50
No. 2 Mixed	1.15	@	1.20
Ledger and Writings	1.50	@	1.55
Solid Books	1.40	@	1.45
No. 1 Light Books	1.00	@	1.05
Blanks	1.90	@	1.95
Kraft	2.05	@	2.10
New Kraft Cuts	2.30	@	2.35
Manila Envelope Cuttings	2.40	@	2.50
Ex. No. 1 Manila	2.00	@	2.10
Print Manila	.90	@	.95
Folded News (overissue)	.85	@	.90
Old Newspapers—			
No. 1	.70	@	.75
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.55	@	.60
No. 2	.50	@	.55
Straw Clippings	.75	@	.80
Binders' Clippings	—	@	.70
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	30.00	@	35.00
No. 2	28.00	@	33.00
No. 3	26.00	@	31.00
No. 4	20.00	@	25.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.08½	@	.12
Rag Content	.17	@	.45
All Rag	.36½	@	.51
Writings	.08½	@	.20
Superfines	.22	@	.50
News	.04	@	.06½
Book, M. F.	.07	@	.12
Book, Super	.08½	@	.13
Book, Coated	.09	@	.20
Coated Litho	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.12
Manila, Sul. No. 1	.05	@	.05
Manila, Sul. No. 2	.03¾	@	.04¼
No. 1 Kraft	.06¼	@	.06½
No. 2 Kraft	.05¼	@	.05½
Common Bogus	.03½	@	.04
Straw Board	—	@	50.00
News Board	—	@	52.50
Chip Board	—	@	50.00
Single Manila Pulp lined board	60.00	@	65.00
Single White, patent coated board	77.50	@	85.00
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White	.04½	@	—
No. 2 Soft White	.03¼	@	—
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.00	@	2.25
Writing Paper	—	@	1.70
No. 1 Books, Heavy	1.75	@	1.85
No. 1 Books, Light	—	@	1.50
No. 1 New Manila	2.50	@	2.60
No. 1 Old Manila	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.00	@	1.20
Old Newspapers	.70	@	.75
No. 1 Mixed Paper	.60	@	.65
Box Board, Chip	.60	@	.65

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	—	@	3.00
Domestic	—	@	3¼
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	2½
Scrap burlaps	—	@	3.00
Wool Tares, heavy	—	@	3.00
Mixed Strings	—	@	2.25
New Burlap Cuttings	—	@	3.75

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1	.11	@	—
New Unbleached	.14¼	@	.15
Washable	.07¾	@	.08
Fancy	.10¼	@	—
Cottons—According to Grades—Blue—			
Blue overalls	.12½	@	—
New Black, soft	.07	@	—
Khaki Cuttings	.07	@	—
Corduroy	.04	@	.04½
New Canvas	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1	10.00	@	—
Repacked	9.50	@	—
Miscellaneous	8.50	@	—
White No. 2—			
Repacked	6.50	@	—
Miscellaneous	5.25	@	—
Thirds and Blues—			
Repacked	5.00	@	—
Miscellaneous	3.50	@	—
Roofing Stock—			
No. 1	3.00	@	—
No. 2	3.00	@	—
No. 3	2.50	@	—
No. 4	2.00	@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph	.09	@	.12
Label	.09	@	.12
News	.03¼	@	.04
No. 1 Jute Manila	.09½	@	
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.05	@	.05½
No. 1 Kraft	.06¼	@	
Common Bogus	.02¾	@	—
Straw Board	55.00	@	60.00
News Board	52.50	@	—
Chip Board	52.50	@	—
Wood Pulp Board	4.50	@	5.00
(Carload Lots)			
Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope	6.25	@	6.50
Sisal Rope	2.50	@	—
Mixed Rope	1.50	@	1.75
Scrap Burlaps	2.25	@	2.50
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.75	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.65	@	3.70
No. 2 Hard White	3.25	@	3.40
No. 1 Soft White	2.70	@	2.80
No. 2 Soft White	1.80	@	2.00
No. 1 Mixed	—	@	1.50
No. 2 Mixed	1.25	@	1.30
Solid Ledger Stock	1.75	@	1.90
Writing Paper	1.60	@	1.65
No. 1 Books, heavy	1.35	@	1.40
No. 2 Books, light	1.15	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.75
Container Manila	.85	@	.90
Old Kraft	2.00	@	2.10
Over issue News	.90	@	.95
Old Newspaper	.60	@	.65
No. 1 Mixed Paped	.50	@	.55
Common Paper	.30	@	.35
Straw Board, Chip	.60	@	.65
Binders Bd., Chip	.60	@	.65

Domestic Rags—New.

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06½	@	—
Silesias, No. 1	.10½	@	.11
New Unbleached	.14	@	.14½
Washable	.07¾	@	.08¼
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall	.11	@	.11½
New Blue	.04	@	.04¼
New Black Soft	.06	@	.06¼
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.06½	@	.07
Corduroy	.04	@	.04½
New Canvas	.08¾	@	.09
New Black Mixed	.05	@	.05¼
Old			
White, No. 1—			
Repacked	7.00	@	7.25
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05½	@	.05¾
Miscellaneous	.05	@	.05¼
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.15	@	3.25
Black Stockings	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11½	@	.12½
Light tinted	.12½	@	.13½
Dark tinted	.14	@	.15
Ledgers (sulphite)	—	@	.13
Ledgers No. 1	34	@	
Ledgers No. 2	26	@	
Writing	.09½	@	
Writing S. C.	.10	@	
News f. o. b. Mills—			
Rolls (carloads)	3.65	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	8.25	@	—
No. 2 M. F. (carloads)	7.95	@	—
No. 3 M. F. (carloads)	7.25	@	—
No. 1 S. C. (carloads	8.75	@	—
No. 2 S. C. (carloads)	8.25	@	—
No. 3 S. C. (carloads)	7.75	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	30.00	@	35.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	55.00	@	60.00
Sulphite, bleached	80.00	@	
Sulphate	62.50	@	65.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut.	3.60	@	—
Soft White Book shavings	3.25	@	—
White Blk, News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas	1.00	@	—
Kraft	2.15	@	—
News and Scrap—			
Strictly Overissue	.80	@	—
Folded News	.80	@	—
No. 1 Mixed Papers	.60	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto	Per lb.		
No. 1 White shirt cuttings	.15	@	.15¼
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¾	@	.10
No. 1 Old Whites	—	@	—
Third and blues	.05½	@	.05¾